

HISTORICAL SOCIETY
OF MONTANA
HELENA

COURSE OF STUDY

FOR THE

COMMON SCHOOLS

OF MONTANA.

No 15

PREPARED UNDER THE SUPERVISION OF THE

State Superintendent of Public Instruction.

PUBLISHED BY AUTHORITY.

1899.



INDEPENDENT PUBLISHING COMPANY,
HELENA, MONTANA.

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INTRODUCTION.

Section 1705 of the political code, referring to the duties of the Superintendent of Public Instruction, reads:

“He shall prepare and prescribe a Course of Study for all the public schools of the State.”

Although this has been the law since 1895, Montana has never had a State Course of Study. The need of such a course has been greatly felt in all the schools of the State, where courses of study are not prepared by the city superintendents.

Two years ago steps were taken to secure a course of study for Montana. At a convention of county superintendents, held in the city of Helena, August 27-28, 1897, which, it may be added, was the first convention of the kind ever held in the State, and at which many of the leading educators of the State, besides county superintendents, were present, the question of the preparation of a State course was taken up, and it was the unanimous sense of the convention that measures should be inaugurated to secure the same as soon as possible.

The convention selected the following named persons as a Committee on Course of Study, to adopt a plan of procedure in the preparation of the course, and report to the convention:

Miss Lilian Carey, County Superintendent of Jefferson County, Chairman.

Miss Ina Craven, County Superintendent of Cascade County.

Miss Kathryn Johnston, County Superintendent of Lewis and Clarke County.

Prof. J. E. Klock, Superintendent City Schools, Helena.

Dr. O. J. Craig, President State University, Missoula.

August 28th the committee submitted the following report, which, after some discussion, was unanimously adopted:

To the State Superintendent and County Superintendents of Montana:

We, your Committee on Course of Study, report as follows:

"We recommend that the county superintendents of Montana, and ten other members chosen from the active school workers of the State by the State Superintendent of Public Instruction, be considered a committee of the whole to pass upon a course of study to be prepared by a sub-committee for the common schools of the State. That the State Superintendent choose a sub-committee, which committee, together with the State Superintendent, as chairman ex-officio, shall immediately prepare a course of study, proof sheets of which shall be submitted to each member of the general committee, who shall carefully examine the same, and make such alterations, corrections, or substitutions as he shall deem advisable, and return the same with his suggestions within five days from the receipt of the same to the State Superintendent, to the end that as little delay as possible may be occasioned in the publication of the course of study.

"That the report of the sub-committee, together with the suggestions of the various members of the general committee, shall serve as a recommendation to the State Superintendent in carrying out the provisions of Section 1705, of the political code of the State of Montana, which provides that the State Superintendent of Public Instruction shall prepare and prescribe a course of study for all the public schools of the State."

This was the first step taken toward securing a State Course of Study. At that time it was earnestly hoped and expected that the work of preparing the course would be at once commenced, and finished by the following September, so that it could be placed in the hands of the teachers on the opening of the schools. But many and unforeseen obstacles prevented this, and the publi-

cation of the course has, consequently, been delayed for two years, much to the regret of the teachers and county superintendents, and much to the regret and disappointment of the State Superintendent.

By a resolution of the convention, the State Superintendent appointed as a general committee on course of study the following:

Prof. C. H. Robinson, Great Falls.

Prof. M. A. Stapleton, Anaconda.

Prof. W. E. Harmon, Bozeman.

Prof. J. P. Hendricks, Butte.

Prof. E. O. Busenburg, Glendive.

Prof. H. A. Hull, Dillon.

Prof. H. A. Peairs, Marysville.

Pres. O. J. Craig, Missoula.

Pres. D. E. Sanders, Dillon.

Prof. J. E. Klock, Helena.

The members of the sub-committee to prepare the course were:

E. A. Carleton, Superintendent Public Instruction, Chairman.

Prof. H. A. Hull, Dillon.

Prof. H. A. Peairs, Marysville.

Pres. O. J. Craig, Missoula.

Pres. D. E. Sanders, Dillon.

Prof. J. E. Klock, Helena.

Every member of the sub-committee who, by the action of the convention, in conjunction with the State Superintendent, were to prepare the course, was actively engaged in educational work, which demanded practically all his time, so that, in most cases, prompt attention to the work assigned was impossible. In a short time it was discovered that the course could not be prepared within the time it was expected to be.

Delay and disappointment were also occasioned by the failure of one member of the sub-committee to prepare the work assigned him. This necessitated the preparation of his work by the other members of the sub-committee. After the material for the course had been

prepared, it was found that there was no money to pay the expense of publishing the same.

While the legislature had directed the State Superintendent to prepare a course of study, it had not provided for the expense of publishing the same; the publication, therefore, was still further delayed, and it seemed doubtful for a time whether we would be able to publish it at all.

But the demand and need for it were so great that an appeal was made to the State Board of Examiners to authorize its publication and pay for the same out of the public printing fund.

The Board of Examiners voted to charge the expense of printing the course to the public printing account, and the way was, at last, made clear for publication. This explanation is made because it is due to the members of the sub-committee having in charge the preparation of the work.

The work involved in the due and thoughtful preparation of a course of study for the common schools of a state is of great magnitude. No one without experience can have any idea of its magnitude or of the doubts and uncertainties, of the trials and tribulations which lie in the path of a course of study maker.

So great has been the advance in theories and methods of education that, to-day, a course of study which embodied only advanced ideas and methods would scarcely be recognizable by those who refuse to believe that the "new education" is any improvement over the old, and who still persist in dwarfing the intellectual life of the child by obstinately clinging to the "good old way" of teaching.

But this course is not prepared with the intention of making the burdens of this class any easier to bear, nor, on the other hand, of fortifying the position of the advanced teachers. It is designed to be used as one of the many tools or helps of the teachers in improving the common schools of the State. It is to be used and followed, not as an end but as one of a number of means to

the end—the best education of the child possible.

It is not claimed that it is entirely original, or that it is by any means perfect. In the preparation of some portions of the work many courses of study have been consulted, and much that was considered good in them has been incorporated into this course.

It is hoped that it will prove suited to the needs of our common schools, and that the teachers of the State will diligently study it, so that the greatest possible benefits may be derived from its use. Experience will reveal its defects, which can be corrected in a second edition. It is published by authority of law for use in all common schools of the State.

By resolution of the State Board of Education the work as outlined in this course becomes the standard of admission into the accredited high schools of the State.

To Prof. H. A. Peairs, Dr. Oscar J. Craig, Pres. D. E. Sanders, and Prof. J. E. Klock, members of the sub-committee, the thanks of the friends of education in Montana are due for valuable assistance in the preparation of this work.

THE PLAN.

The course is arranged to cover a period of eight years, of eight months each. This gives, in schools which are in session nine months a year, two weeks each half-year for review. It is intended to give a thorough, common school education as well as to prepare pupils for admission to any of the high schools of the State.

Inasmuch as only a small minority of the public school children ever enter high school, it is thought proper to graduate pupils from the common school course.

The common schools will ever be the schools in which the masses are educated. They should be as efficient as it is possible to make them. Every inducement should be held out to the pupil to persuade him to complete the course.

EXAMINATION AND GRADUATION.

Upon the completion of this course, graduating exercises should be held in all the rural schools and in as

many of the urban schools as it is thought advisable. Suitable diplomas should be awarded those who fully complete the course and successfully pass the final examinations.

No pupil will be allowed to graduate and receive a diploma who has not passed the final examinations upon questions prepared and marked by the county superintendent. The teacher and county superintendent must recommend, in writing, to the school trustees, the granting of diplomas in all cases. Diplomas will be procured by the county superintendents and furnished to schools as needed. When a diploma is granted to a pupil upon completion of the course, it will be signed by the county superintendent, and countersigned by the teacher and chairman of the board of school trustees. No satisfactory substitute for examinations has, as yet, been discovered, still they may be held so frequently or conducted in such a manner as to be of positive detriment. It is the abuse of the examination, not its proper use, that is to be guarded against.

While every properly conducted recitation is, in a sense, an examination, yet an occasional written review, not oftener than once a month, is valuable. The pupil's rank or grade should be determined by the daily recitation and the examination or written review.

Let there be a written review of but one study on any day, instead of giving up a whole day to examinations, as is often done. This will rob the examination of much of its terror, and it will be a much fairer test of the pupil's ability.

The monthly examination or written review should be conducted upon questions prepared by the teacher, or, in case the county superintendent prefers to prepare the questions, then upon those prepared by that officer.

In districts having a superintendent, these questions will be prepared by him.

These questions should be most carefully and thoughtfully framed, so as to be a fair, and, at the same time, a thorough test of the pupil's progress and ability. The

final examination for promotion or graduation should always be upon questions prepared by the county or city superintendent.

METHODS OF INSTRUCTION.

The methods of instruction indicated in the course of study are intended to be suggestive rather than otherwise; to aid and assist the teacher, not to hinder or embarrass her in her work. To the inexperienced teacher, who has had little or no special preparation for the work of teaching, the methods here suggested should prove of great value, and to all teachers it is believed that they will be of material assistance.

Methods of instruction differ even among the best teachers, yet there are certain general principles of education which must be understood and recognized in the school room if we are to secure the best results. If the results of teaching are not what they should be, or are not satisfactory, a trial of the methods herein suggested might work an improvement.

WORK BY MONTHS.

So far as practicable, the work has been outlined by months. This was desirable, since the terms of school in the rural districts are of unequal length. By this plan, every teacher will be able to determine whether or not she has accomplished a month's work in a period of four weeks. If her school is in session but five months in the year, then she is expected to do five months' work as outlined in the course. A school that is in session but four or five months a year, will require about two years in which to do a year's (eight months) work.

It must be remembered, however, that this course of study is made for the pupils—not the pupils for the course. If one or more pupils can do a year's work in half a year, so much the better.

No pupil should be held back who is prepared to advance, and no pupil should be advanced who is not prepared.

Let it never be said that the 'lock-step' obtains in your school.

USE OF TEXT-BOOKS.

Text-books are indispensable and must be used. The pupil must be taught how to use them. Most pupils study the text so as to be able to "recite" the lessons and "pass." This is not the proper motive. The child should early be taught to love knowledge for its own sake. He should learn to study the text-book for the information and power and consequent pleasure it gives, not that he may be able to repeat in the class what he has committed to memory.

Here is where the inexperienced teacher often fails. She sees nothing above or beyond the book. If the child "has his lesson," by which she means that he has memorized the lines of the book and can repeat them, she mistakenly fancies that he is learning fast. Not so. If he has only memorized words he may soon forget all he has learned. Memory plays a great part in education, but it is only a part. The mistake with the class of teachers referred to is, that they make memory the foundation of all education; in fine, all there is in education.

Study the subjects, and teach them. Do not confine either the studying or teaching to the information contained in the text-book in use. Let other authorities be used as well, remembering always that it is a knowledge of the subject that is sought, rather than the ability to repeat the lines of the text.

ASSIGNMENT OF LESSONS.

This is considered by some a test of a teacher's ability. But, however, that may be, the manner of assigning lessons is of greatest consequence. Experience demonstrates the fact that it is absolutely necessary that lessons should be definitely and specifically assigned. The average pupil must be tied to something definite, else he dissipates his time and mental energy. He must be anchored to certain paragraphs on certain pages, and to certain examples, otherwise he escapes from all study through the hole left in a loose or careless assignment. Especially is this true of the pupil who has never learned to study for the pleasure or profit there is in it.

Require the pupil to prepare the lesson assigned. In this way you can hold him responsible for something. Allow no misunderstanding as to what and where the lesson is for the day. Let your assignment, made before the close of the recitation, be so clear and definite that a misunderstanding is impossible.

MUSIC AND DRAWING.

While these studies are not required by law to be taught, no school is complete without them. A few minutes each day should be given to drawing, and the school should be opened with singing. In the primary grades "motion songs" are of very great value. When the little folks become weary or restless a marching song will refresh the class and be greatly enjoyed. The beneficial effort of music upon the discipline fully compensates for the time spent.

An outline in drawing is given. It follows the other work.

REPORTS TO COUNTY SUPERINTENDENTS.

Since it is impossible for the county superintendents to visit schools oftener than once or twice a term, and frequently not oftener than once a year, teachers should be required to report, once a month, to the county superintendent, upon blanks furnished by that officer, as to attendance, discipline, and progress of the school.

These reports should be required monthly, at least in all rural schools, which are not inspected by the county superintendent oftener than once or twice a year. In this way the superintendent is kept in touch with the schools of the county and the teachers, and the teachers and schools are kept in touch with the superintendent. These reports, if properly made, will enable the superintendent to more effectively and efficiently supervise and direct the work of the country schools. One great need of these schools is competent and thorough supervision. These reports will, in some measure, make up for the lack of it.

CLASSIFICATION.

One of the greatest obstacles met in the country un-

graded schools is the great number of classes. How to classify the schools so that all the children will receive due and proper attention is a problem whose solution is still unknown to many teachers. Often we find a school with few pupils, and yet with so many recitations that it is impossible to do full justice to all.

There is but one known remedy—fewer recitations. Combine classes. This is imperative.

The following on “Alternation of Work” is taken from the Illinois Course of 1897, and is worthy of serious study by the rural teachers. By the application of this principle of alternation much of the difficulty of classifying the country school is overcome.

ALTERNATION OF WORK.

“Country and village schools have practiced combining classes, to reduce the number of recitations, ever since they have been in existence. It is a necessity and must be done, or a large part of the common school curriculum must be abandoned. Alternation is the systematic and regular union of two grades of pupils on consecutive years of work, both grades doing the work of one year in one class, while the other year’s work is entirely omitted. The next year the work omitted is taken up and the first year’s work dropped. By this plan each pupil does all the work of the course, but not in the same order, while the number of classes is diminished.

Alternation in Seventh and Eighth Years.—To illustrate, consider the seventh and eighth year’s work, as given below, with sixteen recitations, if the course is to be taken in order:

SEVENTH YEAR.

Reading or Literature.
Spelling. (Not same as Eighth Year.)
Arithmetic. (Business.)
Grammar. (Etymology.)
Composition.
Geography. (Mathematical North America, and South America.)
History (to the Administrations.)
Physiology. (Elementary.)

EIGHTH YEAR.

Reading or Literature.
Spelling. (Not repetition of seventh year.)
Arithmetic. (Mensuration.)
Grammar. (Syntax and Analysis.)
Composition.
Geography. (Europe, Asia and Africa.)
History. (Constitutional period to present time.)
Civics.

The work in each year is arranged so as to be entirely independent of the other year, and can be taken first or second, as the circumstances of each pupil require. The children are supposed to be from twelve to fourteen or fifteen years old. When a pupil reaches this part of the course he will take that part to be taught next, going into the class already organized. Thus in 1897-8, pupils reaching the grammar grades should take the eighth year's work with those who have already done the seventh year. In 1898-9 all pupils, who have not already done so, should take the seventh year, while those who have taken both can either pass on into the higher course, or review the first year of the grammar grades again, as is deemed best. The number of recitations is reduced one-half.

Alternation in Higher Course.—The two years of the Higher Course may be alternated in the same way. Let all who have completed the common course take in 1897-8 the first year of the Higher, and in 1898-9 the second, together with the new pupils reaching that course in that year. Algebra cannot be alternated. Two classes are necessary. Again the number of recitations is reduced about one-half.

Alternation in Intermediate Grades.—In the intermediate grades alternation can be used partially. The fifth and sixth years can be alternated easily in reading and spelling, while in the third and fourth years the language has been prepared with this in view.

Alternation in Observation Work.—In Observation Work all pupils above the third grade can take zoology in 1897-8, botany in 1898-9, and physics in 1899-1900.

Alternation in Penmanship and Drawing.—In penmanship all classes should practice at the same time, and if there be two grades, instruction can be given one division while the other division writes or draws, and vice versa. Drawing may be managed in the same way, though drawing and penmanship may alternate day by day with profit to both branches.

Alternation in Graded Schools.—The smaller graded

schools of two to six rooms will find this system of alternation of great benefit in giving them more time by reducing the number of recitations. A careful study and practice of alternation for eleven years has demonstrated its usefulness and feasibility.

CULTURE AND NATURE STUDIES.

Following the outline of the formal studies will be found an outline of work in Culture and Nature Studies. This should be of very great help to the teacher. It is arranged by grades, so as to supplement the other work, and should be correlated with it.

GENERAL REMARKS.

A record of the monthly and final examinations should be carefully preserved. This record, taken in connection with that required to be kept by the new register recently published, will give the incoming teacher the necessary information in the classification of the school the first day. Heretofore much valuable time has been wasted by the new teacher in learning the standing or grade of the pupils. No record has been left of the scholarship of any class or pupil, and time is lost in ascertaining to what class the pupils should be assigned.

The new school register seeks to correct this evil by requiring the teachers to make a "Report to Successor," showing, definitely, the standing or grade of every pupil, and even the page in the course of study to which the class has advanced, and where, ordinarily, the class should commence the next term.

This failure to keep a record of each pupil's work has often been the cause of great injustice to the pupils. The new teacher, having no means of knowing the standing of her pupils, begins, oftentimes, at the very place where they began the preceding year. This discourages the children and they lose their interest in the school.

Children like to advance, never to turn back. Pupils should thoroughly master the work of any grade or any portion thereof before being allowed to leave it, but they should not be held back for a single day longer. Very often the work in which some of the class are deficient

can be made up quite as well in the advance lessons as by going over the same ground again.

CONCLUSION.

It will be noticed that his course does not, as a rule, indicate certain pages of the book as the limit of a month's or a year's work. This is sometimes done, but it is not thought advisable to do so in this course.

The reasons for not doing so are both pedagogical and prudential. In a given time a pupil is supposed to have accomplished a certain amount, as clearly indicated in the course, and to have acquired a certain amount of power. To name the exact page to which he shall go in a stated time is empirical and accomplishes no good results. Then, again, changes in text-books renders this plan useless. No teacher can fail to readily understand, from a study of the course, when her pupils accomplish the amount of work expected in any given time. This, we think, is all that is required.

With the hope that this course will prove a positive help to the teachers of the State, and that our common schools will be materially benefited and improved by its use, it is respectfully submitted.

E. A. CARLETON,
Superintendent of Public Instruction.

COURSE OF STUDY

FIRST YEAR.

READING. Discussion.

In teaching the beginners, the object is not to make of them, in a few weeks or months, readers, mathematicians or grammarians, but rather to guide them to do, feel, think and express.

The above being true, the teacher should be in no hurry to push the little one into a reading or written vocabulary, but spend her time and energy in preparing suitable material for keeping busy the hand, heart, brain and tongue.

Bearing in mind that the first months of school life are a preparation, or a leading up to all subjects, the earnest teacher sees and feels that all nature must be drawn upon, that each brain cell may be started into activity and that the child mind may be fully and evenly developed. To such teachers we recommend a careful investigation of the suggestions given in "Course of Study in History and Literature," by Emily J. Rice, and "Landmarks of Literature," by Mary E. Burt. From these choose the best.

FIRST GRADE.

The reading lessons of the first two months should consist of the expression of the child's thoughts and feelings. Reading is only the expression of thought. The teacher, by a wise use of objects, pictures and drawings will bring the child into contact with nature in such a way that he has abundant food for thought and an eagerness to express his thought.

First Month.—Teach fifteen familiar words objectively. The order to be followed is: (a) The idea to be obtained from objects and pictures. (b) The spoken word to be given as an oral drill. (c) The written word as blackboard work. (d) Use script from the beginning.

The interested attention of the pupils must be secured before satisfactory work can be accomplished. This condition can be brought about by an intelligent use of objects, pictures, drawings, etc. After the idea has been repeatedly associated with the objects, pictures, etc., the child will readily substitute the written for the spoken word. Care should be taken to make the association as strong as possible, so that the written word will bring up the idea in the child's mind vividly and clearly. A word which has been associated with a particular idea in the mind will, when seen, recall that idea faintly, if the association is weak; vividly, if the association is strong. As rapidly as words are taught, they should be used in sentences. Keep a list of all words taught upon the blackboard, and add all new words as fast as they are learned by the class. Words that express only relation should be taught in sentences. Pronounce the articles and the words modified by them as one word. Pupils should be taught from the beginning to make a proper use of punctuation marks and capitals. For defining words use synonyms.

Induce pupils to use new words in sentences. Give attention to distinct articulation, natural expression and correct enunciation of all sounds. Correct position of body in sitting, standing and walking is important, and should receive careful attention. Guard against unnatural habits of voice or manner. Let the standard for good reading be its near resemblance to good conversation.

The words should be selected as far as practical from the text-books in use.

Second Month.—Teach fifteen additional words. Use the diacritical marks to teach the long and short sounds of all vowels. Pronounce slowly names of objects near

at hand, and have pupils touch or point to the objects thus M-A-T. All drill upon the consonants. All of the words previously taught should be placed upon the black-board and new words added as fast as they are presented. Continue to drill upon these words as heretofore indicated. Induce pupils to use new words in sentences. Give special attention to distinct articulation, natural expression, and correct enunciation of vowel sounds. Continue the use of the script. Continue to combine words in original sentences. This can be done from the black-board much better than from charts or books. The teacher may occasionally dictate easy sentences to be copied by the pupils. In all written exercises, care should be taken to see that words are correctly spelled, and that sentences are properly punctuated. Every sentence written by the pupil should be read by him. Avoid the use of sentences similar to the ones in the book, in order that the lessons may be fresh when the book is used. Sketch the outline of some familiar locality, for instance, a farm-yard. At first put in two or three objects and write sentences about them. In succeeding lessons, gradually fill in the picture, and make a connected story. A large wall picture may be used in the same way.

Third Month.—Continue the oral drill upon words, introducing the words found in Stickney's First Reader to page 10. Continue the development exercises upon words, associating the symbol with the idea to be represented. Idioms and words which express only relation should be taught in sentences. Pronounce the articles and words modified by them as one word. Never pronounce the word "the" when standing alone as "thu."

The abstract phonetic drills should be displaced by concrete exercises, using the word and the sentence as a basis for the work; that is, instead of giving drills upon isolated phonetic elements, the word should be taught as a whole and finally separated into its parts by slowly pronouncing the word, and thus articulating the various elementary sounds of the word or sentence in immediate

succession. The action of a written word upon a child's mind should be instantaneous before any attempt at phonetic analysis is made. Instruction should at all times be considered as secondary to the intense mental activity which may be aroused by an appropriate and judicious exercise of the child's mental faculties. "The teacher who concentrates effort upon the vocal utterance only, or the vocal utterance first and the thought afterwards, is leading her pupils astray."

The all-important point to be determined by the teacher is this: Are the pupils led to get the thought from the use of the word or the sentence? If the thought is fully mastered, the proper oral expression will be a comparatively easy task to the child. The tone of the voice in reading is a sure index to the mastery of the thought. Do not permit pupils to read until all the words of the sentence can be called at sight. Continue to write the sentence upon the board, and after directing the attention of the class to the written work, erase before pupils are permitted to give oral expression to the thought of the sentence. Occasional conversational exercises may be carried on by the class in oral and written exercises combined. Such sentences as the following may be written upon the board by the teacher, to be responded to by individual members of the class: "Charlie, please hand me a piece of crayon." "Mary may point out a new sentence from the list of words found upon the blackboard." "John may tell me one thing about 'The Old Woman and Her Pig,' " etc.

"The written or printed word is used to recall an idea. It has no other use." The skill of the teacher is shown by the various devices introduced for inciting thought in order to control the expression of her pupils in reading.

Fourth Month.—Continue to drill upon the words introduced in Stickney's First Reader to page 18. The naming of pages in the reading is merely to indicate to the teacher the amount of work which should be done each month.

Fifth Month.—Stickney's First Reader, from page 30 to page 42. In teaching new words, combine the word and phonetic methods. Teach the long and short sounds of the vowels. Keep up a constant review of the words of previous lessons.

Sixth Month.—Stickney's First Reader to page 50. The following stories may be told by the teacher as a basis for future work in language and literature: "The Old Woman and Her Pig," from "Classic Stories for Little Ones."—McMurry. "How the Leaves Came Down."—McMurry. "Golden-rod and the Aster," from "Nature Myths and Stories."—Cook. "The Fir Tree."—Andersen. The children should draw pictures on the black-board or slates to illustrate the various stories told. These pictures and stories may finally be used as a basis for the language work.

Seventh Month.—Stickney's First Reader to page 58. Watch the tone of voice of pupils. Allow no drawling. Require pupils to speak quickly and with expression.

Eighth Month.—Stickney's First Reader to page 69. Constantly introduce the words from the review with the advance. Give pupils an opportunity of seeing the words used in various ways and connected with different thoughts. These words should be thoroughly impressed upon the mind before proceeding with new words from the Reader. Continue to associate words with objects and pictures, but do not permit children to commit sentences to memory, or to depend upon the order of the words in the sentence to assist them in reading. The success in teaching beginners to read depends largely upon the thorough mastery of the words taught during the first two or three months of the child's school life. Drill in reading new combinations at sight may be given by writing words upon slips of paper, to be drawn and used in matching with objects. The reading of such sentences must be as rapid and natural as in quick conversation.

Continue the phonetic drills upon the simple elementary sounds. Do not read or recite pieces in concert.

Use synonyms in defining words.

LANGUAGE.

Before the child can express thoughts, he must come into contact with nature. Ideas must be in the mind before words have a meaning. The mind must be stirred into action by various experiences with nature's forms; the emotions must be aroused, then the necessity for words arises; experience, knowledge, feeling, then expression follows. This is the course which all minds take in their development. The child must become familiar with natural objects, the subject matter in myth, fable or story, the facts in his own experience or experiences of others, before he has a basis for the expression of thought in language. The materials for language are furnished by history and literature work, nature study, the primary science course, and the readers used in regular reading classes. The plan is conversation between teacher and pupils; oral expression by pupils, followed by written expression. Careful attention should be given to correct forms, punctuation, spelling, etc. Daily drills should be afforded so as to secure ease in expressing thought in writing. The child must be trained to write correct English. Good models, ample practice, sufficient material and careful guidance will secure correct expression and ease in both oral and written expression of thought.

Talking: (a) Conversation about familiar objects; free use of chalk in representing objects. (b) Simple stories told by teacher and reproduced by pupils. (c) Original efforts of children to relate their own experiences. (d) Simple stories to illustrate morals and manners. (e) Use of fables and fairy stories as basis for language. (f) Correct errors in pronunciation and syntax without giving reasons. (g) Secure correct use of irregular verbs, do, go, give, were, think, write, see, eat, buy, make. Simply the proper use, not technical knowledge.

Writing: As soon as reading is begun, have pupils write (a) Reading exercises copied. (b) Familiar sen-

tences written from dictation. (c) Easy original sentences. (d) Give attention to punctuation, capitals, etc.

Every lesson must be made a practical exercise in language. Train pupils to be careful in all they say and write. See that their efforts are correct. The language work will furnish much material for the reading exercises. An exercise from nature study or literature becomes very valuable for language, and just as interesting and useful for reading. This plan will put into practical use the principle of pedagogy—Arouse interest by presenting the familiar in a new way, or for a new purpose. Let all knowledge seek expression through drawing, reading and saying.

In conversation exercises teach incidentally the proper use of the following words: Are, larger, largest, longer, longest.

For written work reproduce the stories in literature previously read or told for this purpose by the teacher. Oral lessons should furnish the basis for written exercises.

Require pupils to represent with chalk and pencils. Have them talk about the things represented. Example: The teacher may tell a simple story. Require children to make drawings of objects mentioned. Then have them give the story.

In conversational exercises teach the words: Was, were, has, have, a, an, to, two, too.

According to the plan suggested, teach the use of the words: hear, here, no, know, there, their, write, right|

Constantly appeal to the perceptive faculties, that proper concepts may be gained. The hand as well as the organs of speech should be trained in expressing ideas. For conversational exercises, written or oral, require pupils to make drawings illustrating form, position, size, direction, parts of objects, etc.

From the beginning see that pupils make a proper use of capitals and punctuation marks. Make use of story cards for reproduction exercises.

NUMBERS.

First Month.—The number work for the first year should be informally introduced as games or play exercises. The following material is indispensable to the primary teacher. Blocks, colored splints, colored beads, cards, strips of colored paper and pasteboard cuttings.

The experienced teacher will devise many ways for using the material at hand. Carefully planned arithmetical games will prove both helpful and interesting to children. The child should be led to see relations between numbers and things, rather than be compelled to spend his time in abstract arithmetical observations.

To illustrate, the teacher may place her colored beads as follows:

(1)	Red	Blue
	oooo	ooo

Require pupils to place beads in groups equal to given groups. The groups should be considered by units as well as by size. It is quite as essential that the child should be led to see the relations in numbers before he learns to count, as it is that he should learn to read words before the alphabet is learned.

Too much stress cannot be laid upon the fact that the important thing to be observed at this stage in the mental development of the child, is to give him an opportunity to see relations. Consequently no stress whatever should be laid upon the use of numbers or figures. Care should be taken to introduce the use of language by systematic and well-directed questions, such as: "Which is the larger of the two groups, the red or the blue? If the beads be changed to apples, which group will you prefer?" etc. Again arrange beads or objects equally, thus:

(2)	Red	Blue
	oooo	oooo

Continue to question pupils by asking: "Which is the larger group?" To the answer, "They are of the same size," "How do you know?" should be asked. Continue the exercises by changing the numbers and material in

each case. With counters in hand require the pupils to work a variety of problems. All seat work should be assigned by placing the material before the pupils and requiring them to arrange it according to the plan indicated by the teacher; that is, the teacher places beads, splints, blocks or blackboard drawings before pupils, as:

(3)	Red	Blue
	(a) ooooo	(b) ooo

Require pupils to place two beads for each bead in the example, as follows: (c) ooooooooooooo (d) oooooo

Continue to question pupils by asking, "Which is the larger, (b) or (d)?" "How much?" "How do you know?" The answer is quite sure to be, "I know that my pile is twice as large as your pile," because I took two blue beads for each blue bead in your pile." "Which is the larger, (a) or (c)?" etc. "How do (a) and (b) compare with (c) and (d)?" "How do you know?" Do not lose sight of the fact that every recitation in numbers should be an exercise in language.

(4) Make two combinations equal to (3) as follows:

Red	Blue
ooooo	ooo
ooooo	ooo

(5) Require pupils to make one combination equal to the four combinations in (4), as,

Red	Blue
oooooooooooo	ooooooo

With the splints in the hands require each child to test his work. Children cannot help becoming greatly interested in the testing process.

(6) Develop the idea of similarity and difference by judging objects as to weight, form, color, etc. Continue to arouse observation by frequently introducing exercises as the teacher's judgment and personal experience may determine, until the necessity for naming the numbers becomes apparent.

Second Month.—By carefully directed questions, lead children to properly observe relations between objects and numbers. For this purpose number games may be

introduced by using colored splints, blocks or beads, arranged as follows:

o Red.
oo Blue.
ooo Yellow.
oooo Violet.

Question as follows: The red is what part of the blue? What part of the yellow? The blue is what to the red? To the violet? The red is 1-3 of what? etc.

This work may be continued by giving practice problems, as follows:

The red is a yard of ribbon. What is the blue? The yellow? The violet?

Teach the number 5*. Combine the subject matter from the daily program as a means of drill in arithmetical composition work. To illustrate: Tell a story about flowers, using the numbers 2 and 3; about butterflies, using the numbers 2 and 2; about fruits, using the numbers 4 and 1, the answer to be 3.

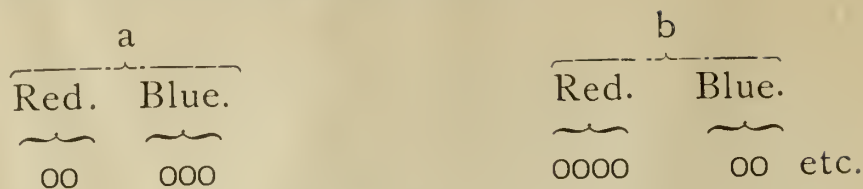
Third Month—The thoughtful teacher will at all times arrange her work with a view to gratifying the play element which predominates in childhood. For this purpose she will constantly draw upon such material as she may have in her possession, to the end that her work may partake at little of the abstract and as much of the concrete as possible.

Colored beads may be strung as a basis for the original work which is to be required from individual members of the class. The teacher should make her assignments by placing numbers upon the blackboard arranged as follows:

2	4	3.
3	2	2
—	—	—

* The teacher should bear in mind that "The method which neglects to recognize number as measurement and considers it simply as a plurality of fixed units, necessarily leads to exhausting and meaningless mechanical drill."—Psychology of Number.—McLellan and Dewey, page 85.

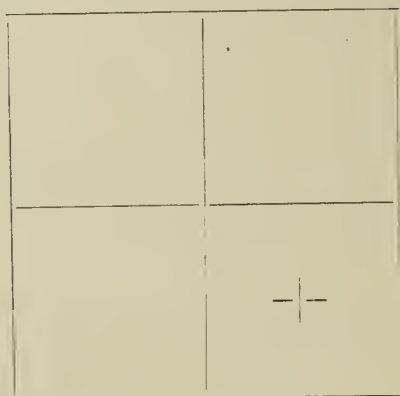
Pupils should string beads thus :



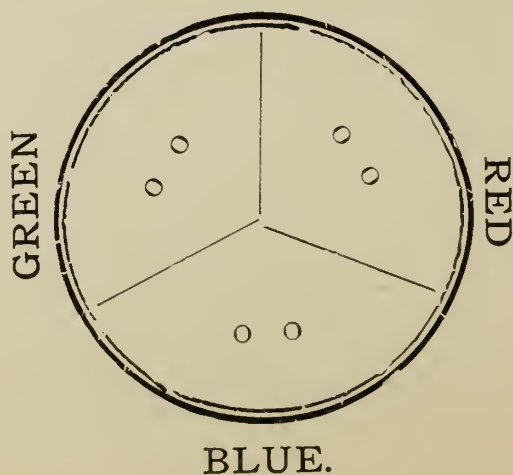
Continue the language work by requiring pupils with beads in hand, strung upon a string as illustrated, to tell the story for (a) about vertebrates; the story for (b) about invertebrates; as, "I have four beautiful yellow butterflies and two white butterflies; how many butterflies have I?"

For additional relation work introduce the fraction $\frac{1}{4}$. Continue to make all developments by the use of drawings and objects as follows: $\frac{1}{4}$ is $\frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{4}$ is $\frac{1}{3}$ of $\frac{3}{4}$, etc.

For concrete illustration use apples, cookies, etc.



For additional illustrative work in fractions, pieces of colored paper may be put together in the form of a circle divided into thirds, thus :



With six beads given, require pupils to distribute them equally between the blue, red and green as shown in the diagram. Question as follows: I have six pennies and give $\frac{1}{3}$ to Charlie; how many pennies have I given to Charlie? How many have I left? What part of the whole number of pennies have I given away? What part have I left? etc.

Teach the number 6. Continue the original story work and drill upon all combinations and numbers heretofore taught. Require results to be given rapidly.

Fourth Month.—Introduce the use of toy money in exercises like the following: Place upon the blackboard drawings representing a variety of articles, as follows: Place upon each drawing a figure to represent the price of the articles, thus: cup 8c, knife 7c, slate 6c, top 2c, ball 3c, and apple 1c. With 8c what articles may be bought from the board. From the following drawing develop the relation of $\frac{1}{3}$ to the different parts of a unit:



Show that $\frac{1}{3}$ is $\frac{1}{2}$ of $\frac{1}{4}$. $\frac{1}{4}$ of $\frac{1}{2}$, etc.

Continue to give pupils an opportunity of making a practical application of the fundamental principles, thus:

$$\begin{array}{r} 3 \quad 8 \quad 8 \quad ? \\ 4 \quad -2 \quad ? \quad 3 \\ \hline \quad \quad 6 \quad 8 \end{array}$$

Develop the measuring power of the number 8 and continue to drill upon the fractions $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$.

Fifth Month.—Use splints, pasteboard cuttings, toy money, etc., to develop the idea of tens. Teach the use of the fractions $\frac{1}{3}$, $\frac{2}{3}$; $\frac{3}{4}$, $\frac{1}{2}$ and $\frac{1}{3}$. By use of material

heretofore described, blackboard drawings, etc., the teacher should lead her pupils to see that $\frac{1}{4}$ is $\frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{8}$ is $\frac{1}{4}$ of $\frac{1}{2}$; that $\frac{3}{8}$ is $\frac{3}{4}$ of $\frac{1}{2}$, etc.

Give such practice problems as will naturally grow out of the exercises as explained in (2); as, If $\frac{1}{2}$ yard of ribbon is worth 8 cents, what is the value of $\frac{1}{8}$ of a yard? $\frac{1}{4}$ of a yard? $\frac{3}{8}$ of a yard?

The teacher should take great care that the child makes practical his previous experience in "seeing," by requiring him to repeat the steps in reasoning made through his observation.

Sixth Month.—Make a constant use of toy money and continue to combine the subject matter of the daily program for drill and arithmetical composition work. Tell a story with the numbers 2 and 6, the answer to be 12. Use splints, pasteboard cuttings, toy money, etc., to develop the idea of tens. Teach the use of the fractions $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{1}{2}$ and $\frac{1}{8}$.

(2) By the use of material heretofore described, blackboard drawings, etc., the teacher should lead her pupils to see that $\frac{1}{4}$ is $\frac{1}{2}$ of $\frac{1}{2}$; $\frac{1}{8}$ is $\frac{1}{4}$ of $\frac{1}{2}$; that $\frac{3}{8}$ is $\frac{3}{4}$ of $\frac{1}{2}$, etc.

Give such practice problems as will naturally grow out of the exercises as explained in (2); as, If $\frac{1}{2}$ yard of ribbon is worth 8 cents, what is the value of $\frac{1}{8}$ of a yard? $\frac{1}{4}$ of a yard? $\frac{3}{8}$ of a yard?

The teacher should take great care to see that the child makes practical his previous experience in "seeing," as, $\frac{1}{8}$ of $\frac{1}{4}$ of $\frac{1}{2}$, the cost of $\frac{1}{8}$ of a yard, is $\frac{1}{4}$ of the cost of $\frac{1}{2}$ of a yard, or 2 cents.

Develop the number 12.

Seventh Month.—Continue to give pupils an opportunity of seeing relations by introducing exercises like the following:

(1)	(2)	(3)	(4)	(5)	(6)	(7)
2	2	2	2	2	2	2
	2	2	2	2	2	2
		2	2	2	2	2
			2	2	2	2
				2	2	2
					2	2
						2

Compare column 1 with 2. Column 3 with 1. 4 with 2. 3 with 5. 6 with 2, etc. Let numbers in each column represent cents. Give problems as follows. A pound of nails can be bought for the number of cents represented in column 2. How many pounds of nails can be bought for the number of cents represented in number 4? In number 6?

Change the unit of comparison by supposing the number of cents found in column 3 to represent the cost of an orange. Let the question be asked, "How many oranges can be bought for the number of cents represented in column 6? In column 1? In column 2? etc."

Teach the number 14.

Eighth Month.—Drill upon the four fundamental principles in fractions as indicated. In multiplication, make use of products not exceeding 16. Written thus:

$$\begin{array}{r} 2, 3, 4, 5, 6, 7, 8 \\ 2 \end{array}$$

In division use numbers from 2 to 8 as divisors written thus:

$$2 \) \ 4, 6, 8, 10, 12, 14, 16$$

Story work should accompany each combination. Do not lay stress upon the mechanical work. Present the work at all times in such a manner as to exercise the child's ability to see relations.

Teach the number 16.*

WRITING.

Writing should be taught in connection with other subjects. The teacher is referred to this subject which is discussed in another portion of the course. Children

* Psychology of Number, page 110.

learn at first, largely by imitation, to write short words and simple stories placed upon the blackboard by the teacher. The slate or paper should be properly ruled as a guide to the children.

SPELLING.

Spelling should be taught by means of writing.

SECOND YEAR.

READING.

First Month.—Stickney's First Reader, page 82.

Second Month.—Stickney's First Reader, to page 92.

Third Month.—Stickney's First Reader, page 98.

The teacher should give great care and thought to the preparation of the reading lessons.

Fourth Month.—Stickney's First reader completed.

Fifth Month.—Stickney's Second Reader, page 24.

The new and difficult words should be written upon the blackboard and the pupils drilled in the pronunciation and use of each word before undertaking to read the lesson from the book. The attention of the class may be diverted from the text by rapidly combining the words from the blackboard into original sentences. For this drill the teacher, with pointer in hand, points rapidly to the words required for the sentence; after which individual members of the class are called upon to read without relying upon the words upon the blackboard. The reading exercise is thus divided into three distinct mental operations, the first operation being merely perceptive; that is, seeing the words as they are pointed out. (2) The pupil is given time to grasp the thought of the sentence as indicated by the pointer. (3) The pupil gives oral expression to the thought of the sentence.

The teacher may vary this work by first writing the entire sentence upon the board, to be read at sight. (2) The sentence is erased by the teacher. (3) The thought is expressed in words by the pupil. To make this exer-

cise a success, it is necessary that the teacher should enter fully into the spirit of the lesson. Plenty of time should be given for the idea to be grasped before the pupil is called upon to give oral expression to the thought. It is only by mastering the thought that good expression can be secured. The thought of each new sentence should be developed by a careful series of questions. Drill upon rapid phrasing. Draw out specific meaning by words. Dispense with rambling talks. No matter how simple the subject may be, the teacher should seek new and attractive ways of presenting the same. This necessitates daily preparation on the part of the teacher. Pupils should be able to indicate the pronunciation and spell by sound each word in the lesson. Continue the exercise of slowly pronouncing words as a basis for phonetic exercises.

Place upon the board short stories taken from other readers, to be read at sight. Do not permit pupils to begin the preparation of the lesson until the uses of important words have been developed, and all of the difficult words can be called at sight.

Make use of supplementary reading. Never allow a pupil to read in an unnatural tone.

Sixth Month.—Stickney's Second Reader to page 45. Continue to drill upon words. The plan for conducting the exercises should be similar to the one suggested in the first month's work. Practice building new words from letters contained in given words; thus, Build five words from the word "elevates;" as, elate, eat, slate, ell, vat. Require pupils to hand in a list of words from the review to be spelled and pronounced by the class. Pupils may occasionally correct each other's work. In these exercises pupils should be instructed to pass to the board and copy doubtful words and sentences. After sufficient time has been given for correcting the work, time should be called as in other exercises. The class may then be given an opportunity of passing judgment upon doubtful work placed upon the blackboard, the teacher always reserving her criticism until the last. Teach all simple

diacritical marks. Slowly pronounce words. Pupils must be led to gain for themselves the pronunciation of all words containing known elements. Vocal exercises should frequently be given for the purpose of securing naturalness of tone, inflection and emphasis. The words in the main, should be taken from the work done in other studies. Use culture and nature studies. A permanent list of words thus obtained should be placed upon the board and frequently reviewed. Drill in making quick and definite pictures of the words to be learned, in the minds of the pupils.

Seventh Month.—Second Reader, page 60. Continue to devote a portion of the time of each reading recitation to word study in which the attention is directed to the meaning and different uses of the word, the form, sound, and finally the three should be associated in a sentence. In fact, most of the drill work in reading at this time should be presented from the sentence as a unit of thought. Continue the blackboard drill upon sentences by quick and pointed questioning exercises, as suggested and bring out the principal thoughts of the sentence in the first month's assignment. Where the question is not sufficient to properly bring out the thought or shade of meaning of the word, pupils may be required to perform acts, handle objects, pictures, tell stories, etc., to make the subject matter of the sentence as real as possible. As a result of this exercise, purely mechanical expression is avoided, and the emphasis, inflection, pauses and tones are controlled by thought. In pronouncing words, special attention should be given to articulating consonants as well as vowel sounds. Lead children to observe that in monosyllabic words having a single vowel and ending in a consonant, the short sound of the vowel is usually given when the vowel is followed by a consonant and a final "e." In the recitation it is highly important that the voice of both teacher and pupil should be used naturally and easily. As a test for sight reading, simple supplementary reading may be introduced two or three times a week. Use culture studies.

Eighth Month.—Stickney's Second Reader to page 77. Carefully note all suggestions made for the First and Second Grade work. Remember that it is only by thoroughly mastering the thought that good expression can be secured. Frequently give pupils an opportunity of gaining for themselves pronunciation of words containing known elements. Drill upon vocal expressions calculated to secure naturalness of tone, good inflection and proper emphasis. Continue to give practice upon sight reading. Occasionally place short stories upon the blackboard taken from other readers for this purpose. Continue to assign reading selected from the outlines in elementary science, history and literature. Read lists of words in phonetic order and have pupils pronounce them slowly.

LANGUAGE.

Continue the use of pictures and sketches made by the teacher, together with stories read or told, as the basis for oral and written exercises. Give at least one simple experiment per week to be reproduced by pupils as oral or written exercises. To illustrate: (a) Require pupils to place a cylinder, cube and sphere vertically before them upon the desk. Remove the hands and observe results. (b) Place obliquely. (c) Horizontally, etc. Finally require pupils to give summaries and descriptions, written and oral, of points observed. Other simple experiments upon air, water, etc., should be given during the month.

Give short stories containing moral lessons.

Make the culture studies and science lessons the basis for language exercises. Describe games, work done by people in community.

Continue to teach pupils to use all new words in conversation. Require pupils to memorize and repeat selections. They should, however, be short and well selected.

The child should never be taught words before things. Do not even depend upon the imagination before giving children an opportunity of apprehending ideas through

the senses. Drawing does not greatly facilitate a knowledge of nature. Every word is a condensed generalization of observation. Give individual impressions.

Continue to make all of the various exercises of the grade work subjects for language exercises. Secure proper use of the following irregular verbs: Catch, choose, creep, dig, dare, drink, drive, live, find, fly, hear, hide, know, keep, learn, lend, met, ride.

Constant practice in written exercises from reading, literature and nature work. Incidentally teach the common abbreviations, punctuation and quotations. Oral drills should be given on the words and forms of expression which are difficult or commonly misused; as, are, is, this, has, have, a, an, were and was.

Compositions, letters, board and seat exercises should be given to cultivate good writing and correct spelling. Lead the pupils to discover and correct all errors both in the oral and written exercises.

NUMBERS.

First Month.—Combine two simple fractions into one sum; as, Mary has $\frac{1}{8}$ of 16 apples; Sarah has $\frac{1}{4}$ of 12 apples; how many has each? How many have both? Require pupils to give problems of their own construction. Make use of all principles heretofore taught, in original problems. Insist upon brisk answers and allow but one trial.

Compare $\frac{1}{2}$ with the following fractions, written thus:

$$\frac{1}{2} \left\{ \begin{array}{l} \frac{1}{8} \\ \frac{1}{4} \\ 1-16 \\ \frac{3}{4} \end{array} \right.$$

For sight reading review 16. Use DuShane cards for drill exercises.

Second Month.—In originating problems make a constant use of weights, measuring cups and the yardstick. Require pupils to originate one or more problems daily. Pen and ink should be used in all arithmetical composition work. Continue to make use of fractions with numbers from 1 to 10 as denominators. Compare $\frac{1}{4}$ with the following fractions, written thus:

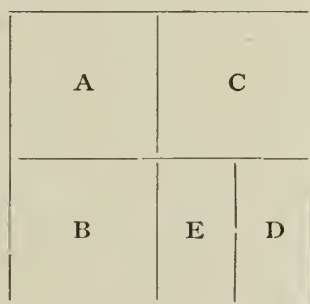
$$\frac{1}{4} \left\{ \begin{array}{l} \frac{1}{2} \\ \frac{1}{4} \\ \frac{1}{8} \\ \frac{3}{8} \\ \frac{3}{4} \end{array} \right.$$

Examples like the following may be given: $\frac{1}{4}$ of a yard of cloth is worth 4 cents. What is the value of $\frac{1}{2}$ of a yard? Of $\frac{1}{8}$ of a yard? $\frac{3}{8}$ of a yard? $\frac{3}{4}$ of a yard?

The teacher should write work upon the board to be followed by the pupil in his arithmetical composition work, as: $(\frac{1}{3} \text{ of } 9) \times 3$. The child's composition should read something like the following: At 3c each, what is the cost of 9 oranges?

Teach the number 17, as previously suggested.

Third Month.—Introduce surface forms, and require children to compare a given part to the various parts of a unit. Illustration: A is what part of the unit? A is what part of A. B. C? E is what part of A, B? Examples like the following may be given: Let the drawing represent a bushel of grain; what is A? What is C and E? What is D and B? etc.



Continue to make each lesson in numbers a lesson in language. Pupils should read from four to six numbers from the DuShane cards at sight.

Teach the number 18.

Fourth Month.—Carefully review the numbers heretofore taught. Combine two fractional expressions into a single problem, making a practical application of the relation work previously introduced. For this purpose continue to use drawings and objects as a basis for the development exercises, thus:

A	C		B	
	G	F	E	D

Let drawing in the illustration stand for a pound of butter and question as follows: What is A? What is A and B? What is D? What is F? etc. Change the exercises by introducing gallons, bushels, pounds, feet, yards, etc.

Develop the number 20.

Fifth Month.—Combine two simple fractions into one sum. Give a daily drill upon sight reading of from two to four numbers, producing results not to exceed 20. For drill exercises use the DuShane and Shove cards.

Fractions: The following device, taken from Klemm's European Schools, page 214, will enable pupils to dispose of simple problems in reduction of fractions at sight:

1															
$\frac{1}{2}$								$\frac{1}{2}$							
$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$				$\frac{1}{4}$			
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16
$\frac{1}{3}$				$\frac{1}{3}$				$\frac{1}{3}$				$\frac{1}{3}$			
1-6		1-6		1-6		1-6		1-6		1-6		1-6		1-6	
1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12	1-12
1-5		1-5		1-5		1-5		1-5		1-5		1-5		1-5	
1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10

Examples like the following may now be given:

$$1 - 2/4 = ? \quad 2/4 - 1/4 = ?$$

Require pupils to give problems of their own construction.

Sixth Month.—Continue the oral and written story work, and complete the 4's, within the limit of the as-

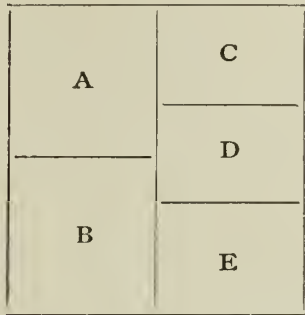
signment, in addition, subtraction, multiplication and division. From the DuShane cards call for sums, products, quotients and fractional results, etc. Require a written analysis for at least three problems per week.

Teach the number 23.

Seventh Month.—Keep up the review by continuing to introduce all of the elements of the various subjects thus far taught in the course. Illustration: When milk is selling for 10c a gallon, what is the cost of $1\frac{3}{4}$ gallons? What is the cost of 3 qts? 2 qts?

Let the number 12 be represented by the following diagram:

What number will represent A? What number will represent C? What number will represent B and C? etc.



Supposing the seats in your school-room to be placed 24 inches apart: Draw a rectangular diagram to the scale of $\frac{1}{4}$ of an inch to the foot to represent the space occupied by seats in your room. (1) How many inches more or less than 6 in the line which you have drawn to represent the length of your rectangular figure? (2) This difference is what fractional part of a foot? (3) The length of the rectangular figure is what part of a foot? (4) The width of the rectangular figure is what fractional part of a foot? (5) Draw separate lines to the scale of $\frac{1}{2}$ of an inch to the foot, to represent the distance between the first and second seats; second and third; third and fourth; fourth and fifth; fifth and sixth. Give the length of each line drawn, respectively, in the fractional part of a foot. In the fractional part of a yard.

Write a problem containing the following words and signs: Petals, corolla, stamens, vertebrates, animals, +,

and —. Complete the 5's in multiplication. Teach the number 24.

Eighth Month.—In fractions use 1, 2, 3 and 4 as enumerators. Continue to give examples in United States money, avoirdupois weight, dry and long measure. Continue to combine two or more fractional expressions in a single problem. (1) How many pecks of oats in 2-8 of 16 bushels? (2) What is the cost of a bushel of plums at the rate of 25 cents per peck? (3) 2-3 of 6 pounds is 2-8 of how many pounds? (4) What is the cost of a pound of cheese when $\frac{3}{4}$ of a pound can be bought for 15 cents?

Continue to require pupils to illustrate the operations by diagrams.

Teach the number 25.

Complete multiplication and division, within the limit of the assignment, through the 6's.

GEOGRAPHY.

Study form, surfaces, lines, circles, squares, triangles and rectangles, not as abstractions but as preparation for map making. Judge distances, using splints and slips of paper. All work in this grade should be a subject for constant discussion, and finally the topics should be prepared in ink and placed in each child's book as a permanent record of the work done. Lead children to observe the effect of rain upon the school grounds; evaporation; change of animal covering upon account of temperature.

Give oral instruction upon air, wind and water. These lessons should be based upon the natural phenomena as they appear in the outdoor world. Require children to keep a record of their own observations; of the temperature, direction of winds, and the amount of rainfall. Note the effect of temperature upon plant and animal life. Lead children to observe sunset and sunrise; the effect of freezing and thawing upon the school grounds. Visit places of interest.

Use the sand-pan for teaching the topography of the neighborhood. Make a constant use of facts gleaned from the plant and animal studies. Connect leaf study

with soil making. Study soil as to quality and quantity. Growth of plants. Make a collection of home products. Pictures may be used where the material cannot be readily procured. Teach cardinal and semi-cardinal points of the compass.

Draw a map of the school-room by scale. Distinguish between a map and a picture. Study land surfaces—wet, dry. Need of irrigation. Water supplies—water works, springs, creeks and rivers. Introduce the use of the sand-pan in developing proper conceptions for the following: Tributaries of rivers, mouth and source. Islands, lakes, plains, table-lands, etc. Take sufficient excursions to fix proper conceptions of the different soil formations, land surfaces and other points of information required in the month's assignment.

SPELLING.

Words should be carefully selected from the reading lessons and oral exercises for the spelling lesson. Use pen and ink daily.

PHYSIOLOGY AND HYGIENE.

Breathing: Necessity of air to life. How we breathe, Explain about the lungs; effects of stooping; round shoulders; impure air; the need of ventilation.

The skin; use of; appearance; effects of cooling too suddenly; pores; damp clothing; care of nails, hair, etc.

Food and drink; why we eat and drink. Wholesome foods. Caution against too frequent and too rapid eating. Care of teeth.

Bones and muscles. Use of bones. Right physical habits of children. Right kind of food for growth of bones and muscles. Proper exercises, etc. Emphasize throughout the year the effects of narcotics and stimulants.

THIRD YEAR.

READING.

First Month.—Stickney's Second Reader to page 106.

Second Month.—Stickney's Second Reader, page 135.

Third Month.—Second Reader, page 165.

Fourth Month.—Complete Second Reader.

Fifth Month.—Stickney's Third Reader, page 31. Give a short daily drill in phonetic spelling and the use of diacritical marks. Introduce the use of the dictionary by arranging alphabetically the words of chosen paragraphs. In defining words, continue to make use of synonyms. Drill on rapid phrase reading; that is, observing a word, a phrase, or a sentence at a glance. This can be done by opening the book, closing it at once and repeating what was read. While the attention of the pupil is diverted from the board, sentences may be written upon the blackboard, after which the pupil is to turn, glance at the sentence or sentences, turn again and read or write the sentence or sentences as may be required. See first month's assignment for 2nd Grade.

Sixth Month.—Stickney's Third Reader, page 55. Continue the exercises as directed in the first month's assignment. See to it that the pupils are taught how to study. In assigning lessons, all new words should be marked, pronounced, accented, and used in sentences. Insist upon proper position. Pupils who have defects in articulation should have special drills in pronunciation, and in the proper use of the vocal organs.

Continue to give drill upon the word as a whole and the sentence as the unit of expression. So present the word, separately or in sentences, as to awaken the associated ideas in the mind. Keep up a keen interest in words in both oral and written exercises. Slow, monotonous pronouncing, and quick, explosive, utterances should both be avoided. Do not permit pupils to read sentences

aloud until they can call all of the words of the sentences at sight, and properly associate each word with the idea to be expressed. Bring out the thought of the sentence by quick, pointed, questioning exercises. The teacher should pay special attention to the words commonly mispronounced, and call them up repeatedly for reviews in class drills.

Seventh Month.—Third Reader, page 78. Continue to observe instructions heretofore given. Do not lose sight of the fact that pupils should be able to master the thought and call all of the words of the sentence at sight before they are permitted to read. Difficult words should be used in original sentences. In defining words, continue to make use of synonyms; that is, require the pupil to substitute in his reading as many words and phrases of his own as he can without materially altering the sense of the sentence. The pupil's reading should at all times be natural and conversational in style. Attention should be given to subject analysis, diacritical marks, inflection, clearness and distinctness of articulation. Special attention should be given to pronouncing words ending in consonants; such as words ending in "t" or "d", combined with words beginning with the same letters.

Language cards or cut-up stories may be introduced as supplementary reading.

Eighth Month.—Third Reader, page 102. Give special attention to articulation, pronunciation and the mechanical work of training the vocal organs. Do not allow pupils to form the habit of uttering words without perceiving their sense. The chief value of oral reading is that it enables the teacher to estimate the child's ability to gain thought from the printed page. See to it that the child habitually associates the word with the idea which the word is intended to represent.

"The teaching which assists the acts of association, assists the child in learning to read. That which does not assist these acts is useless. The teacher who concentrates effort upon the vocal utterances only, or upon the vocal utterance first and the thought afterwards, is lead-

ing her pupils astray." Are the pupils led to get the thought? Is the question of vital importance in determining the efficiency of the schools? The teacher should be versatile in devices and methods calculated to rouse thought on the part of pupils in reading as well as in other lines of work. Good reading can only be induced by first fixing the thought to be expressed in the child's mind. Do not permit the recitation to degenerate into a mere imitation exercise.

LANGUAGE.

First Month.—(1) Give short lessons upon the following: (a) Capitals, beginning of sentence, proper names, beginning of a line of poetry, days of the week, names of month, etc. (b) Punctuation. Kinds of sentences as to meaning, uses of period, comma, hyphen, quotation marks, apostrophe.

(2) Forms and relations of words.

(3) Conversation. Reproduce story read or told by the teacher.

(4) After the subject has been discussed as a class exercise, have pupils reproduce the main points in an original way. Pictures should be drawn and stories told for the purpose of reproducing portions of the grade work as outlined for the month, in which the pupils have shown special interest; e. g., reproduce: (a) Story of Columbus. (b) Story of Robinson Crusoe. (c) The story of the sun-flower and its kindred, and other work chosen from the nature and culture outline.

Give special attention to the following: (a) Shall, will, sit, set, lie, lay, do, does, is, are. (b) Colloquial errors are faults in usage, bad pronunciation, wrong accent, etc.

Second Month.—Continue to combine the review with the advance for written and oral work. Make use of the course of study in geography, culture and nature studies as a basis for conversation and written exercises. At least three written exercises should be required per week, under the immediate supervision of the teacher.

Third Month.—Continue the oral work as suggested in previous outlines. Sufficient board and seat work should

be given to secure correct forms in spelling, capitals, abbreviations, paragraphing, use of capitals, titles, punctuation, addresses and signatures. Ample material is afforded in the nature and culture studies.

Fourth Month.—Continue to make use of the literature outline as a basis for illustrative story work. Hold children responsible for free, full and accurate reproductions of oral written exercises. Quietly but carefully correct mistakes in English. Frequently require pupils to write a single statement concerning what they have read; then two, and finally require them to write the whole story as they remember it. Occasionally require pupils to write sentences about objects seen in a wall picture.

All oral exercises should be quick and lively. The teacher should make careful preparation for the lesson so as to direct the conversation. Give pupils an opportunity to know, and they will be ready to talk. The teacher must prepare the thought material for the children. This may be done in various ways. The nature study work or the literature will afford excellent thought material. The teacher may give a preliminary talk or chalk modeling exercise and require pupils to prepare written reviews for language lessons. As previously suggested, close supervision is an absolute essential for the right kind of results. Papers should be retained from week to week so as to mark the progress of the children in neatness, correctness and power of written expression of thought.

NUMBERS.

First Month.—For mental work continue to combine the fundamental principles of fractions. The concrete should continue to precede the abstract. Use numbers to 100. Pupils should be able to write problems, making use of numbers and operations as indicated by the teacher as,

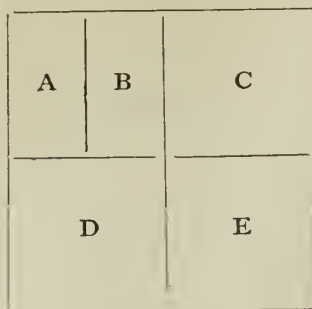
(1) $27 + \frac{1}{3}$ of 27×2 .

(2) $\frac{1}{3}$ of $108 + \frac{1}{9}$ of $8 \div 2$.

The pupils should use the numbers as indicated in (1). A had 27 sheep and purchased $\frac{1}{3}$ as many more; he sold

the sheep he then had for \$2 apiece. How much money did he receive?

Continue the drill upon surface forms with the number 100 preparatory to the introduction of percentage. Illustration:



Let the diagram be represented by 100. Question upon the diagram as follows: What part or parts of the figure would represent the following: 50, 75, 25, $12\frac{1}{2}$? etc. Multiply and divide by 7.

Second Month.—Continue the use of fractions having different numbers for numerators; as, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{7}{8}$, etc. Multiply and divide by 8, products at all times to be kept within the limit of assignments.

Continue to exercise the child's ability in seeing relations by introducing the following: Arrange material, such as blocks, colored splints, etc., or draw lines upon the blackboard in groups, thus:

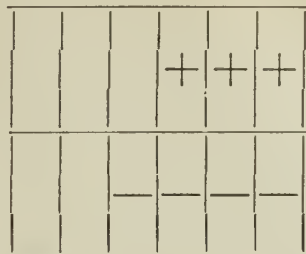
(a) / (b) //// (c) // (d) //////

Compare A with B, C and D respectively. Change the basis of comparison by beginning with B, C or D as a unit; thus, C is what per cent. of A? What per cent. of B? Of D? etc. Develop percentage equivalents for $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$.

Third Month.—Continue to add columns of from four to six figures at sight. In order that pupils may learn to think logically, each new step in numbers should be illustrated objectively; that is, the concrete should continue to precede the abstract until correct and definite habits of thinking are formed. The following plan may be used to demonstrate some of the simple operations in addition and subtraction of fractions.

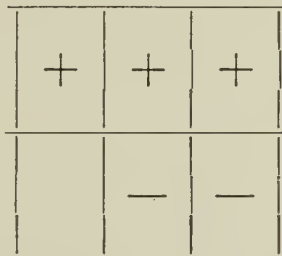
Problem: $\frac{1}{3} + \frac{1}{4} = ?$

Require pupils to draw the diagram of a house containing the fewest number of rooms which will enable them to arrange all of the rooms into groups of fours and threes each. Pupils should then be required to mark off with a +, $\frac{1}{4}$ of the rooms, and with a —, $\frac{1}{3}$ of the rooms; thus,



Pupils may then be easily led to discover that the expression $\frac{1}{4} + \frac{1}{3}$ of the diagram is equal to the sum of the +’s and the —’s, or $\frac{7}{12}$ of the entire number of rooms. Again, let the problem read, from the fraction $\frac{1}{2}$ subtract $\frac{1}{3}$.

The diagram may be drawn thus:



Mark $\frac{1}{2}$ of the diagram with +’s and $\frac{1}{3}$ with —’s finally lead pupils to see that the sum of the +’s in the diagram less the sum of the —’s, is equal to the expression $\frac{1}{2}$ less $\frac{1}{3}$ or $\frac{1}{6}$.

Teach to 10’s in multiplication. Develop percentage equivalents for $\frac{1}{5}$ and $\frac{1}{8}$.

Fourth Month.—Continue to make practical use of toy money, including the fractional currency. Continue to exercise upon combining fractions in simple exercises like the following: 8 is $\frac{2}{3}$ of what number? 10 is $\frac{2}{3}$ of some number; what is $\frac{1}{2}$ of the number? Continue the arithmetical composition exercises, and practice upon percentage equivalents as heretofore taught.

Multiply and divide by 12.

Fifth Month.—Introduce the subject of divisibility of numbers; that is, require the pupils to determine by inspection numbers divisible by 2, 3 and 4. Determine by inspection the factors of numbers between 1 and 30. Teach percentage equivalents for $\frac{3}{4}$ and $\frac{1}{6}$.

Sixth Month.—Require pupils to originate and give written analysis of one or more problems daily. For this exercise continue to write upon the blackboard numbers as indicated in the first month. Develop percentage equivalents for $\frac{5}{6}$ and $\frac{3}{8}$. Also write problems upon the board and require pupils to write formulas for the same; thus, Bought a watch for $\frac{4}{5}$ of \$30 and sold it so as to gain $\frac{2}{3}$ of \$12; what was the selling price of the watch? The pupil should write $(\frac{4}{5} \times 30) + (\frac{2}{3} \times 12) = ?$ Pupils may also be required to make a new problem using the above numbers as indicated; thus, When lemons are selling at the rate of $\frac{4}{5}$ of a cent each, and oranges at $\frac{2}{3}$ of a cent each, what will be the cost of 12 oranges and 30 lemons? Give written analysis for the above problem. Determine by inspection the factors of numbers from 1 to 50 inclusive, work to be indicated as follows: $48 = 2^3 \times 3$.

Seventh Month.—Lead pupils to take advantage of operations in multiplication and division by making practical their ability to inspect relations; thus, require 88 to be multiplied by 25. The pupil who has been properly taught will instantly determine the ratio existing between 25 and 100. Finding this to be 4, the work is shortened by taking $\frac{1}{4}$ of 88 and adding two ciphers:

Determine by inspection the factors of numbers from 1 to 75 inclusive. Develop percentage equivalents for $\frac{5}{8}$ and $\frac{7}{8}$.

Begin the work of multiplication and division by two figures. Make use of no number greater than 1000. Develop the use of 10 and 100 as multipliers and divisors.

Eighth Month.—Determine by inspection the factors of numbers to 100. Continue to drill upon simple exercises in percentage, and upon all principles heretofore taught. The tables of weights, measures and money

should be practically applied. Continue to use objects and drawings in demonstration as far as helpful. Grade problems so carefully and drill so thoroughly that accurate habits will be formed. Continue to require pupils to originate one or more problems daily.

GEOGRAPHY.

First Month.—Continue the use of the sand-pan, salt and sand, papier-mache, or crayon modeling, in developing the idea of a hill, a mountain, and a canyon. Teach the topography of the city and immediate vicinity; that is, the mountains, slopes, valleys and creeks. Call for a written description of an ice-house; of ice-packing, imaginary trips, etc. Continue daily observations upon the weather, temperature, direction of winds, etc., as directed in previous assignments. Record the results of observations made upon the topography of the neighborhood; changes brought about through the action of wind, frost, water and heat. Note the influence of roots and decayed vegetables upon soil.

Continue the practice of reading and writing the names of streets. Locate the principal points of interest in county seat, such as school buildings, court house, post-office, principal churches, banks, depots. Continue imaginary journeys. All geographical terms used should be illustrated objectively. To previous observations made upon loam and gravels, add sandstone, limestone and quartz. Continue to record observations made upon plant and animal life. Continue observation on the rising and setting of the sun. Note place and time.

Second Month.—Continue to draw lines and judge distances. Model in sand or crayon, islands, promontories, peninsulas, volcanoes. Study and collect fruits and grains. Observe the influence of worms and ants upon soil. Follow previous suggestions for map drawing. Continue the exercises of judging distances. Direct judgments should always be followed with ruler tests and corrections. Make a collection of home products. Pictures may be substituted when articles cannot readily be procured. Continue to introduce some of the

simple principles governing climate. Locate points of interest in the city and take occasional imaginary journeys. Make a constant use of cardinal and semi-cardinal points.

Draw an outline map of the county by scale. Continue to take imaginary journeys. Begin the study of home products. Study fertile, sterile and mining sections. Compare mountains with valleys. Continue the talks about snow, rain, hail, frost, clouds and winds. Make a careful record of natural and physical phenomena observed during the month.

Third Month.—Carefully review previous assignments. Begin to draw the map of the county seat by scale. Continue to study soil, evaporation and condensation, as observed in clouds, mist, rain, dew, frost, snow, hail, etc. Make use of the sand-pan in reviewing mountain, valley, canyon, drainage and river systems.

Make a constant use of the sand-pan. Begin geographical games. Require pupils to take from the teacher's deck the name of a town or other point of interest attached to a pin or tack, and place upon a map previously prepared for the purpose. The indexing should be carried on by the pupils without hesitation. After all slips have been placed, the exercise may be varied by removing slips at dictation. Continue to draw progressive map of county by scale. Carefully index all points of interest. Note changes in beds of rivers and creeks.

Note the relation of clouds, vapor, light and heat to rain; call attention to the variation of the noon shadows; the relation of animals to plants.

Fourth Month.—Complete the map of the business portion of the county seat. Draw lines by scale to represent the principal streets. Take imaginary journeys. Review mouth, source, and tributaries of rivers.

Continue the progressive map of the county; index towns, rivers and creeks. Name, locate and describe the resources of the county. Continue to record observations; wearing and building process of water; re-

lation of wind to temperature ; moon's phases ; the effect of elevation on plant life.

SPELLING.

Continue to select suitable words from the various subjects outlined in the course of study. Care should be taken to see that all words in written work are correctly spelled. Accept no work slovenly done.

Observe previous suggestions. Keep lists of words frequently mis-spelled, for spelling exercises.

PHYSIOLOGY.

The following topics may be used as subjects for oral instructions: Breathing, the necessity of air to life, and how we breathe ; the lungs ; the effect of stooping ; round shoulders ; impure air, and the need of ventilation, etc.

Bones and muscle. Experiment upon bones by (1) : burning the animal substance, leaving the mineral matter ; (2) Remove the mineral matter by placing the bones in diluted acid. Dwell upon the necessity of right physical habits for children—right food for growth of bones and muscles, proper exercise, etc., and the effects of narcotics.

The skin. Show the structure of the skin ; glands, ducts, etc. Speak of necessity for bathing, clean clothing and the effects of alcohol upon the skin. Explain necessity for pure air ; ventilation.

Food and drink. Kinds of food. Explain the effects of saliva upon the food. Bad effects of excessive drinking at meals. Rapid eating. Care of teeth. Teach a few good table manners.

FOURTH YEAR.

READING.

Supplementary reading should be introduced for a daily exercise. See Literature. Pupils who have access to newspapers at home are usually found to be among the best readers at school. A few minutes once or twice

a week may be spent on the "news of the day." Distribute language cards and papers containing stories for silent reading. In these exercises pupils should be timed as in rapid arithmetical reviews, after which the pupil's understanding of the stories read should be tested by a careful series of questions. Pupils may also be required to select the strongest or most beautiful sentence or paragraph. Require pupils to pass direct judgment. This exercise sharpens the perception, and creates a lively interest, which will add greatly to the pleasure of school life. The teacher should direct the children's home reading, as far as may be, to the end that a love for good books will be formed.

The teacher should use every device at her command for the purpose of leading children to think for themselves, as well as for creating a desire for reading. Children often jingle off words of a sentence without comprehending their meaning. Facts are worth more than words; hence pupils must learn to accompany symbols with ideas. In play the child has a vivid comprehension of the meaning of words, and consequently never speaks in a monotonous tone of voice. Thought is uppermost in his mind, and words are used unconsciously. Naturally, children never deal with words apart from ideas. All lines of school work which do not tend to develop thought on the part of the child should be discontinued. The interested attention of the pupil must be secured.

Give special attention to subjects of analysis, diacritical marks, articulation, pronunciation and expression. Make a constant use of synonyms. By conducting the reading recitation with the pupils at their seats, the attention of the class can be directed to a much better advantage.

Pupils of this grade should be required to do a reasonable amount of silent reading outside of school hours. For this purpose the teacher may select suitable home reading and require pupils to report at stated times concerning what they have read. These reports should oc-

casionaly be made as written reviews to be read for correction at the time set apart for the regular language work. Such exercises can be made pleasant and attractive only when the teacher has made a careful preparation upon the work in hand before meeting her class for recitation. In taking up new lessons require pupils to read silently each sentence or paragraph before attempting to read it orally. While thus engaged, permit pupils to read silently each sentence or paragraph before attempting to read it orally. While thus engaged, permit pupils to ask for the pronunciation and meaning of new words, and for explanations of what they do not understand. After pupils have succeeded in fully mastering the lesson (thought, meaning of words, etc.), they should be given an opportunity of reading the sentence or paragraph in a conversational style; that is, make good talking the model for good reading. Insist upon a frequent use of the dictionary in the study of words, and the force and use of diacritical marks. Pupils at the close of this year's work should be able to read fluently and understandingly any ordinary selection at sight. Where proper precaution is observed "reading may be made, next to observation, the greatest factor in education."

See that your pupils understand how to intelligently use the dictionary.

LANGUAGE.

First Month.—Continue work along lines suggested for third year. Reproductions: (a) Prepare pupils to listen to the story by telling something about it, thus arousing their curiosity. Tell or read the story and develop the outline. After a time have the pupils make their outline. Have pupils tell their thoughts and then write them in their own way. (b) Require pupils to read their exercises, then criticize and refer them back for revision.

(3) Use Bright's outline for fourth grade.

(4) Begin use of dictionary work.

Second Month.—Teach sentences as to form; simple, complex, compound; as to use; declarative, imperative

and indicative. Teach phrase and clause modifiers. Use thought material worthy of attention. Remember that language of value can only be acquired through the process of thinking. What the child speaks under the stress of thought will have a definite language value; hence all nature study exercises, literature, history or geography lessons are of the greatest value in the cultivation of language expression, since they furnish both thought and the proper language form.

Third Month.—Teach simple and modified subjects and predicates. Make use of object-complements, predicate-nouns, predicate-adjectives and phrases, not in a technical way, but through the use of sentences.

Fourth Month.—Incidentally introduce punctuation, abbreviations, quotations and parts of speech.

Fifth Month.—Review parts of speech. For further application of the forms of thought, material may be drawn from the oral lessons, literature and geography exercises. Too much attention cannot be given to careful expression. In assigning work see to it that the pupil is required to intelligently correct his own mistakes. A variety of composition work should be given, such as letters, stories read or told to be reproduced; experiments performed to be explained either as an oral or written exercise. Carefully observe expression, punctuation, the use of capitals, paragraphing, spelling, etc. Do not accept careless or slovenly papers.

Pupils should write upon two or three topics per week.

Sixth Month.—Use all new forms taught. Imitation is of great force in language culture. Lead pupils to make a choice use of language. Compare their productions with choice specimens of literature. Lead them to see the beauty in selected expressions of thought. The literature work will afford ample material. The use of synonyms may be made very practical at this stage.

Seventh Month.—Make use of case forms, nouns in apposition and personal pronouns. The following historical subjects may be introduced as a basis for oral and written work: "Stories of Washington," "Stories of

Thanksgiving," "The Printing Press." All of the above stories are beautifully told in "Stories of American History."—Dodge.

Eighth Month.—Incidentally introduce the use of personal pronouns, possessive pronouns and antecedents. Continue to make use of important events in history as subject matter for written reviews; such as the story of John Smith, William Penn, The Jesuit Missionaries, The Charter Oak, the stories of Cortez, Montezuma, De Soto and the Golden City. Use each topic as the subject of a composition.

Books for teachers: Bright's Language Course, DeGarmo's Language Books, Nos. 2 and 3, Hyde's First Book, Tarbell's Language Lessons.

ARITHMETIC.

First Month.—If the work has been properly done in the first 3 years, the pupil has been made familiar with the four fundamental processes in arithmetic. He has been drilled in the subject of relations of quantity and of numbers, as well as made proficient in taking fractional parts of numbers from $1/2$ to $12/12$, and all per cents. of numbers based on these fractional parts. He has been drilled in quick perception through the use of number cards and charts for quick-drill purposes. He has also been introduced to the simple process of fractions and fractional parts with the surface figures suggested in course for the first three years, utilized as a suggested means of developing the same. The purpose of the first three years has been to give the pupil power to think in relations, and at the same time make him proficient, accurate and quick in addition and subtraction, multiplication and division, fractional parts of per cents., relations of quantity, etc., within the limits prescribed for the first three years. The thought has been that in manipulation of numbers in the first three grades the pupils should not be required to handle numbers greater than 1,000. The teacher will review carefully, by herself, the work of the first three years, and then review the pupils in the same during the half-year. Since

the basis of this year's work has been founded in concrete relations, the reviewing of the pupils on tables of weight, measure, money and time should not be neglected.

Teach long division without reference to text; also addition of fractions. Do not teach L. C. M. as a process except as related to work in fractions. In all your arithmetic work do not neglect analysis, thorough drill, and the emphasis to be placed upon all thought relations in number work.

Continue drill on previous work, elaborating outline of same and requiring oral and written work in addition, subtraction and multiplication of fractions with reference to text.

Second Month.—Walsh's Grammar School Arithmetic to page 210, with the text book in the hands of teachers only. Work, however, should be placed on the board for the pupils.

Third Month.—Multiplication and division of mixed numbers, Federal Money, page 227.

Fourth Month.—Addition and subtraction of fractions. Continue to give practice in original work, page 239. For illustrative work in fractions make use of some unit of measurement. To illustrate: Give a problem to read as follows: $7/16 + 1/2 + 1/4 = ?$ Let the pound of 16 ounces represent the unit of measurement. The problem will then be stated thus: $7/16$ of a lb. is 7 oz. $1/2$ of a lb. is 8 oz. $1/4$ of a lb. is 4 oz. The sum of 7 oz. 8 oz. and 4 oz. is 19 oz. 7 oz. is $7/16$ of a lb. 8 oz. $8/16$ of a lb. 4 oz. $4/16$ of a lb. $7/16 + 8/16 + 4/16 = 1$ and $3/16$ of a lb.

Fifth Month.—Continue drill on long division; and with reference to text take addition, subtraction, multiplication and division of fractions. Continue work in mental drill and analysis with the understanding that analysis is the basis of all true work in arithmetic. Each teacher should prepare a number-chart, which should contain all the essential material needed for quick-review purposes. It must be remembered that after a subject

is developed, the teacher must be skillful in drill, if the pupil is to be made proficient in his number work. The mere outline of the book alone is not sufficient for drill purposes.

Continue work in analysis and mental drill, using material in chart which the teacher has developed for quick-drill purposes. Remember that these charts should be made by the teacher, and the material in them should be an elaboration of the work given in this outline. The central thought in making the pages of the chart should be to provide material, so that no time be wasted in bringing the pupil into the presence of work which will skill him in his review of the same as given in daily drill by the teacher.

Sixth Month.—Walsh's Grammar School Arithmetic in hands of pupils, to page 254.*

For mental drill, teach percentage equivalents for $\frac{1}{6}$, $\frac{5}{6}$, $\frac{1}{8}$, $\frac{3}{8}$ and $\frac{7}{8}$. Make a constant use of the simple principles of percentage, taught by combining in problems for daily drill. Give exercise in divisibility of numbers, factoring, etc. The following outline on Article 475, page 211, is given simply as a suggestive hint of the manner in which the text-book may be used to arouse thought and to direct the child to an intelligent use of numbers. (1) With the first number in column 3, i. e. 243,576,908, use the first number with the sixth in the series, to give products. (2) The first and ninth to give a dividend. (3) $\frac{1}{4}$ of the ninth in the series is the multiplier and the sixth is $\frac{1}{8}$ of the multiplicand; what is the product?

Seventh Month.—Fractions, greatest common division, least common multiple, page 278.

Continue the work as outlined in the text, according to the suggestions given in the previous month. Continue to combine the four fundamental principles for rapid

* The teacher will not be expected to slavishly follow any of the text-book assignments. They should be considered merely as suggestive helps.

work; as, (a) $12 \times 125 - 15 = ?$ (b) Originate problems answering the requirements of (a) and (b). (c) $\frac{3}{5}$ of $25 = ?$ (d) 25 is $\frac{5}{4}$ of what? Combine principles thus: $\frac{3}{4}$ of 12 is $\frac{1}{2}$ of what number? When apples are selling at 24 cents per dozen, what is the cost of 3 apples?

For mental drill teach objectively the percentage equivalents for the different aliquot parts of 100. Develop the principles for G. C. D. Pay special attention to finding exact divisors by inspection.

Eighth Month.—Decimal fractions, page 303. The teacher should originate a sufficient number of mental problems for daily drill. Bailey's and Brooks' mental arithmetics may be used by the teacher as a guide, in connection with the authorized text-book. Carefully note language and gradation of problems. Do not make use of large numbers. Very little, if any good, can be derived from adding, subtracting, multiplying and dividing numbers which run up into the thousands. Mathematical power can much more readily be developed by the use of simple numbers. Require pupils to compose one or two problems daily. This work is invaluable, not only as a means of developing mathematical power, but as a language exercise as well.

GEOGRAPHY.

First Month.—Complete progressive map of the county, including a brief history, the railroads, rivers, creeks, cities and products. For permanent use mold maps in papier-mache or salt and sand. Continue the geographical games. Continue to judge distances and take imaginary journeys. Compare: (a) Process of vegetable decay in wet and dry soil. (b) Effects of rivers and glaciers; flood plains, and wearing and building process of water.

Second Month.—Collect and compare, as far as practicable, the physical properties of soils from the various states. Draw an outline map of the state. Use the ruler in determining some of the principal points of interest in the state. To illustrate: Measuring from the northwest corner on a map of Montana drawn to the

scale of 15 miles to the inch, Helena is found to be 12 inches east and 11 inches south of this point, or 180 miles east and 165 miles south of the northwest corner of the state. This exercise will necessitate hard thinking on the part of the pupils. It is also invaluable in training the child to properly interpret the map. Proceed in the following order:

(1) Draw map: (a) Determine size; (b) length; (c) breadth.

(2) Make relief map.

(3) Represent fertile land by sprinkling pulverized crayon (green) on relief map.

(4) Study occupation of the people in different parts of the state.

(5) Represent the railroads running through Helena; where they begin and end in the state.

(6) Show the State Seal.

Third Month.—Continue to draw a progressive map of the state; locate by measurements ten cities, five railroads and three rivers. A relief map of the state may be modeled in salt and sand or papier-mache. Begin the study of the products of the state, laying special stress upon plant and animal life.

Fourth Month.—Continue the progressive map of Montana, including surface, drainage, climate and state institutions.

Fifth Month.—Complete the progressive map of Montana, including study of the surface, drainage, climate, cities, railroads and products. Continue to prepare papers on the review topics; that is, routes of travel, state institutions, state government, etc. Develop the laws of climate and compare the climate of different localities, bringing out the law or laws which would account for differences or similarities of climate.

Sixth Month.—The geography of the earth should be presented as a whole. Teach children to read a map as they do a book. Pupils should be taught through the map, and not for the map's sake. Care should be taken to develop the subjects in such a manner as to enable

the pupil to recognize system and to be able to classify for himself. Make a constant use of the globe and the map, and see to it that the work is thoroughly done. Hold prominently before the pupil the systematic arrangement of the earth's features. (The teacher should remember that the outline here given is intended to be merely suggestive of the manner in which geography should be presented in this grade.) The pupil must find out for himself, not only the features here mentioned, but many more. In no case should the teacher give the pupil any of the information herein outlined. The principal facts observed should finally become a part of the pupil's geographical knowledge. Outline of topics.—First, form of the earth: (1) Shape, three proofs. (2) Motions: (a) Yearly—fully understand the change of seasons; (b) Daily—Why the days vary in length; zones; (Make zone maps, showing the different zones in different colors with paints, colored pencils or crayon); parallels of latitude; meridians of longitude. (3) Size; diameter; circumference, (comparative.) (4) Character; interior extremely heated; with a three-fold covering; first, a crust; second, water; third, air. As a reference use *Elementary Physical Geography*, by R. S. Tarr, McMillan Co.

Second.—System in the distribution of land and water. Water covers three-fourths of the surface; is massed about the South Pole and extends northward in three great basins. Land is massed about the North Pole, and extends southward in three great bands, and each band is broken into masses called continents. The center of the land mass is the English Channel. The center of the water mass is New Zealand. The Northern Hemisphere contains three times as much land as the Southern; and the Eastern twice as much as the Western. Learn the name, location and boundaries, and the rank in size and importance of each continent and each ocean.

Third.—System in the structure of continents: (1) All are triangular in shape. (2) All are widest at the north and taper to the south. (3) The highest mountains face the greatest oceans. (4) the greatest length

of each continent is in the direction of its principal mountain system. (5) All have their greatest rivers in the east. (6) All have islands at the southeast. (7) The greatest peninsulas extend southward. (8) All have highland borders, hence are basin-shaped. (9) They are so put together as to form one great basin, with the Atlantic as its bottom. (10) The continents approach each other at the north and separate at the south. (11) All are connected by isthmuses, either exposed or submerged. (12) The long slopes face each other. (13) The Atlantic has parallel coasts. (14) The tendency of each continent is to form several basins.

Fourth.—Heat: (1) Heat depends upon distance from the seashore. (2) Heat depends upon ocean currents. (3) Heat depends upon protection. (4) Heat depends upon altitude. Ask practical questions; as, Why is New Orleans so situated? Have children think out reasons for themselves.

Seventh Month.—Continue the progressive map of the world, including the subject matter of all the work outlined for the month. Continue the comparative work as follows: (a) Points common in the structure of the three northern continents: (1) All have broken coasts. (2) All have three peninsulas extending southward and rivers entering at the east of each peninsula. (3) All lie principally in the Temperate Zone. (4) All extend into the Frigid Zone. (5) All have high civilization, large cities and great commerce. (b) Compare the three southern continents as to structure: (1) All have unbroken coasts. (2) Each has a great bend at the west. (3) Each has a single island at the southeast. (4) All lie principally in the Torrid Zone. (5) Are widely separated. (6) Have poor civilization, few large cities and little commerce. Why? (7) None extend into the Frigid Zone. (c) Give a summary of comparisons. (1) The northern are continental while the southern are oceanic in their climate. (2) The northern are bound together by ties of commerce, while the southern have no common ties. (3) The broken coasts of the northern aid commerce,

while the unbroken coasts of the southern retard commerce. (4) The northern have a temperate climate, while the southern have a hot climate. (5) The highest civilization and the largest cities of the world are in the northern; the greatest barbarism and degradation are in the southern continents. The map of North America may be begun.

Eighth Month.—Complete the progressive map of the world. Map of North America continued. The following is intended as a further outline of suggestive hints as to what should constitute the study of the world as a whole. First, study trends of the earth's features. Second, system in the distribution of rivers: (1) A river enters at the east of each southern projection. Rivers to be named and indexed upon a progressive map. Colorado, east of Lower Colifornia; Rio Grande, east of Mexico; Savannah, east of Florida; Rhone, east of Spain; Po, east of Italy; Danube, east of Greece; Euphrates, east of Arabia; Ganges, east of India; Siking, east of Farther India. (2) Rivers of Europe have their origin in one mountain district. The rivers are Rhone, Po, Danube and Rhine. Third, special characteristics of continents: Asia, many projections from a large trunk; great deserts; mountains rise from plateaus; its nearness to other continents; has greatest size; greatest population; largest and coldest country.

Europe: Many projections from a small trunk; greatest comparative coast line; mountains rise from lowlands; ranks first in importance. Why?

Africa: Oval shape; less coast line; difficult of access; dryness; great deserts; abundance of animal life; animals fierce and powerful; great extent of plateaus.

South America; One-sidedness; great rains; large rivers; abundance of vegetable life; isolated location.

North America: Its completeness; no feature true of other continents, but can be traced in North America; plateaus like Asia, mountains like Europe; vegetable life like South America.

Australia: Poverty; isolation; behind the times generally.

Make a constant application of the laws governing climate.

Encourage and direct the reading of pupils by furnishing a list of good books, such as "Zig Zag Journeys," "Footprints of Travel," "Stories of India, Australia and Europe," by Mara L. Pratt; "Stories of the History of Rome," Keeler's "Amazon," "Southern Andes," Dixie's "Across Patagonia."

The following books will furnish suitable material for supplementary work:

Chaplin, Fannie P., and Humprey, Mrs. F. A., Little Folks of Other Lands.

Dunton, Larkin, World and Its People.

Book 3, Our Own Country.

Book 7, Views in Africa.

Johonnot, James, Geographical Reader.

Taylor, Bayard, Boys of Other Lands.

Butterworth, Hezekiah—

 Zigzag Journeys in Europe.

 " " on the Mediterranean.

 " " in Classic Lands.

 " " in Northern Lands.

• Pratt, Mara L., England.

Browne, Maggie, Chats About Germany.

Dodge, Mrs. Mary (M.), Land of Pluck.

Knox, Thomas W.—

 Boy Travelers in Northern Europe.

 " " in Russian Empire.

Pratt, Mary L., Northern Europe.

Bruce, C., Round Africa.

Chesney, J., Land of the Pyramids.

Hale, E. E., and Hale, Susan, Family Flight over Egypt and Syria.

Ober, Frederic A., Knockabout Club in North Africa.

Hield, Mary, Glimpses of South America; or, The Land of the Pampas.

Gilder, Jeanette L., Antwerp and "Old Antwerp." St. Nicholas, Sept., 1895.

Edwards, G. W., What befell Melaatij. St. Nicholas, May, 1895.

Kobbe, Gustav, Along Newfoundland and Labrador. St. Nicholas, April, 1895.

Pennell, Elizabeth R., Palio at Siena. St. Nicholas, Aug., 1896.

SPELLING.

Eternal vigilance is the price of good spelling. The pupils should be required not only to correctly spell, but to define all words which ought to be in their vocabulary. Require them to use these words in sentences, oral and written. Lay great stress upon the proper spelling and use of such words as to, too, two, etc. Drill upon such words and occasionally review them until all the children can use them correctly.

While the spelling book may be used to a certain extent, it must not be forgotten that spelling is a subject of persistent and constant instruction, and one which is best taught in connection with all the other branches throughout the entire school career of the child.

Avoid "cramming." New impressions are interpreted only by means of old ones that happen to represent them. By the old-time spelling recitation, pupils studied one day what they easily forgot the next. When lessons are studied in a careless, unsystematic manner, without purpose, a dull child will be the result. It is very important that the teacher should so present each lesson to the pupil that the faculties of the mind may be developed in their proper order. Spelling, to be of use, must inculcate correct habits. Pupils must learn to observe the new or difficult words found in each lesson. Arouse curiosity and interest. Give practice in deriving words that are apt to be missed. The pupil should derive the words himself; thus, rub, rub-bing, rubbed; happy, happier, happy-est, etc. Encourage the pupil to make a constant use of the dictionary for spelling as well as for pronunciation.

Observe that the spelling is correct in all studies. Require the pupils to make the corrections.

Add to the word exercises suggested for previous month, at least one word-building exercise per week. Any work upon word-analysis may be used by the teacher as a basis for these exercises; such as Reed's Word Book, Kennedy's "What Words Say," Swinton's Word-Analysis, etc.

The objects of the word-building exercises are (1) to enlarge the pupil's vocabulary. (2) To enable them to define a new word at once through familiarity with its root; thus, *cid*, and *cis*, *incision*—a cutting into anything. *Excision*—a cutting out. *Concise*—brief, cut short, etc. Encourage pupils to make a constant reference to the dictionary for spelling as well as for pronunciation. Pronounce words correctly and distinctly and but once as far as reasonable. Carefully examine the suggestions previously made for other grade work. Keep a memorandum of the words frequently misspelled. When enough for a lesson has been obtained, write them on the board for a lesson. Do this in all grades.

All difficult words in the reading lesson and other subjects are to be introduced for the spelling exercise. Give careful attention to the diacritical marks. Teach pupils how to study the spelling lesson. The words of the lesson should be written upon the blackboard for study. Each word should be carefully examined; as soon as the form of the word is well fixed in the mind, the word is erased from the blackboard and the pupil required to give attention to the mental picture of the word thus formed. Lastly, the word is written by the pupil; after which it is re-written by the teacher upon the blackboard and the pupil required to compare the word as written with the copy. If mistakes are made, the process is to be gone through with again. Avoid erasing and correcting only the part of the word which is incorrect. The pupil should have a clear mental picture of the word before attempting to write it. All new words should be used in sentences. Require the pupils to

learn the meaning of all words spelled. Learning the meaning of the words is a part of the spelling lesson.

PHYSIOLOGY AND HYGIENE.

Cigarettes and simple experiments upon alcohol: (1) Light an alcohol lamp and observe color of flame. (2) Hold a saucer over the flame and observe that the flame does not cover the saucer with soot. (3) Test the alcohol in hard cider, beer, wine, etc. Pour a little cider into a test-tube of a homeopathic vial and hold it over an alcohol lamp until the liquid begins to boil. As the vapor of the alcohol passes off, touch a match to the vapor and watch results. (4) Dissolve four tablespoonfuls of molasses in a pint of water; add a spoonful of yeast. Fill a small bottle with the solution and pour the remainder into a bowl. Invert the bottle in a bowl and place it in a window exposed to the sun. After two or three days carefully remove the bottle and try starting a flame as in former experiments.

Continue the experiments upon alcohol by pouring alcohol upon small pieces of beefsteak, the white of an egg, etc. Lead children to observe that animals breathe off carbonic acid gas, while plants give out oxygen. Give simple experiments as follows: (1) Show that lime-water becomes milky when it comes in contact with the carbonic acid gas which is breathed off from the lungs. (2) Place an inverted glass jar filled with water and fresh leaves in the sun. After the jar has stood for a few hours in the sun, the oxygen will collect in small bubbles upon the surface of the leaves. Explain the stomach: use of; manner of eating; tongue, teeth, saliva; need of chewing the food, etc.

Lungs: Teach structure; location; how air gets into the lungs; the effects on blood. Value of pure air. Ventilation and how to ventilate. Effects of clean skin on the work of the lungs. Effects of alcohol upon the work of respiration.

FIFTH YEAR.

READING.

Pupils should be able to indicate the pronunciation of all words in the lesson. Keep up a constant review of words heretofore taught. Do not allow pupils to begin reading until the use of important words has been developed, and all words of the lesson can be called at sight. Select words from the list of review words previously placed upon the blackboard to be used in original sentences. Give daily drill in phonics. Do not allow reading to be sidetracked for rambling talks. No other subject requires more careful preparation on the part of the teacher than reading. At least one good book should be read in class during the term. Cut-up stories taken from the "Youth's Companion," "St. Nicholas," or "Harper's Young People," may be distributed among the pupils to be read in class. Encourage home reading. See that the pupils know the thought of the reading before attempting to read in the class.

Select material from course in literature. In teaching the subjects of reading and spelling, but few difficulties will be encountered when the interested attention of the class had been secured. The success in creating an interest in these subjects depends largely upon the impressions and associations made in the assignment of lessons. The teacher should therefore strive to create an intense interest in these branches, by presenting work in a pleasing and attractive manner. As the power of observation and comparison grows in the child, but little difficulty need be experienced in arousing the faculties of the mind to such an extent that the uses and correct orthography of words may be understood. To illustrate: Give drill on seeing a variety of objects in a stated time. When objects are not available, use pictures, color lessons and other like devices. Require pupils to rapidly

write names of all objects seen. Finally, test their ability to see a number of words, letters or diacritical marks at a glance. Write words upon the blackboard; erase word or words, and require pupils to reproduce. With a little practice, several words may be erased at once for this exercise. Arrange review words upon charts for sight reading exercises. Require pupils to observe several words at a single glance. The words may be written at once with pen and ink, or pronounced by different members of the class as a test of quick perception, and afterwords written from memory or dictation.

The following questions are of vital importance to the teacher of reading: (1) Has the pupil fully appreciated the thought? (2) Has he used correct pronunciation, distinct articulation and natural tones in reading?

In addition to the books of travel outlined for previous month's reading, add "The Barefoot Boy" and "Hiawatha." For supplementary sight reading, let the work be more simple than for the regular grade work. Something like "Gulliver's Travels," or "Tales of Shakespeare," will be appropriate. The teacher should make a special study of literature which may be adapted to this grade, and as far as possible co-operate with parents in selecting appropriate books for home reading. Some children read too much and in a superficial way.

See outline in Literature and Supplementary Reading List.

Carefully observe the previous suggestions, including the assignments made for the third and fourth Grades.

LANGUAGE.

First Month.—Some simple technical forms and uses may be incidentally stated in this grade, such as simple phrase and clause modifiers, where pupils are led to construct illustrative sentences for themselves. Uses of nouns and pronouns. Special stress laid upon objective forms. Review work of previous grades on irregular verbs.

Second Month.—Continue to introduce incidentally the various use of the pronoun: (a) Personal. (b) Posses-

sive. (c) Interrogative. (d) Relative. (e) Antecedents.

Continue to study sentences as to form and use.

Third Month.—Talking and writing: (a) Use of biographies for conversation and composition work. Continue to base lessons upon culture and nature studies. Such works as the "Jungle Books," "Birds and Bees," Hawthorne's "Wonder Book," should be read, discussed and made the basis for written exercises.

Incidentally introduce the study of adjectives and adverbs.

Fourth Month.—Continue the incidental instruction upon the verb. Transitive and intransitive verbs may be studied in connection with written work based upon object lessons, simple experiments and nature studies. Remember that thought material must have a definite value in order to secure good results. Those who write must have ideas.

Continue to carefully supervise all written work. Keep at least three papers per week for reference and comparison. All definitions and rules should be developed and applied in actual practice.

Do your pupils use good English in writing?

Fifth Month.—Continue to make a practical use of transitive and intransitive verbs. Modes and tenses of verbs may be incidentally used, care being taken not to make the instruction technical. This work should be based upon lessons drawn from culture and nature studies.

The following lesson, taken from De Garmo's Language work on the shipwreck in Robinson Crusoe, is suggestive of what may be done to "spice" this branch of instruction with composition work:

—The Shipwreck—

Fearful storm arises. Waves break over ship. Fear. Mighty shock—rock. Sailors cry: "Ship springs leak!" Launch boat. All leap in. Waves upset boat. Men sink. Robinson rises. Dashed against rock. Holds fast. Sees land. Waves retreat. Clambers on shore.

Faints. Comes to. Calls. No reply. All drowned.
Thanks God for rescue.

Use McLeod's cards for production stories.

Sixth Month.—Encourage pupils to read good books and to talk and write about them. Keep the interest in the thought material at the highest tension. This places the pupil in possession of material that will prove of great value in his development. The study of technical grammar isolated from conversation or written language is of doubtful value as a means of language culture. Continue to give practice in the use of the verb: (a) Mode. (b) Tense. (c) Regular verbs. (d) Irregular verbs.

Continue to assign at least one subject each week for composition work. Exercises like the following may be occasionally added: (a) You are in need of a situation as a clerk in the grocery business. Prepare an advertisement setting forth your desire. (b) A letter renewing your subscription to the "Youth's Companion." (c) Write a letter to some noted man asking for his autograph. (d) Write an order in favor of your clerk on a boot and shoe merchant for goods to be charged to your account. (e) Write a letter of not more than twelve lines, refusing as politely as possible the application of an acquaintance for a loan of \$50. (f) Write a letter of introduction.

Make use of at least one important event in history per week as a subject for written review. In all composition work the papers are to be examined and marked by the teacher or by a competent person.

Seventh Month.—Continue to note previous suggestions. Draw on the subject matter of the course—geography, history, culture and nature studies—as a basis for the work.

Definitions and other technical points in grammar, such as person and number of verbs, may be introduced incidentally, but should never be used apart from the sentence or composition, where an ample opportunity is afforded for use and illustration. Remember that the

abstract should never be introduced until the necessity occurs for its introduction; thus, the language work both oral and written should be put in close relation with the other studies. Do not accept carelessly written work. See to it that pupils make a choice use of language, correct and accurate expressions in their daily recitations, both oral and written.

Eighth Month.—In addition to subject matter drawn from the course of study, subjects like the following may be assigned: (a) A description of something to do. (b) A telegram not exceeding ten words and containing four distinct sentences. (c) You have lost a valuable watch: Prepare a notice of the same to be put up in the post-office. (d) Write a local for your city newspaper beginning: "A serious accident occurred at the railroad crossing." (e) Write sentences making use of the following phrases: Of the sun; in the park; above the house; against the wall; among his friends; through the dense forest; upon the table; into the well; with his arm; after you and me; between these boys.

Begin the analysis of sentences containing phrases and clauses as adverb modifiers. Teach sentences as to form: (a) Simple. (b) Complex. (c) Compound. Incidental instruction contained in verbal forms, including the indicative mode.

ARITHMETIC.

First Month.—Make a careful review of the following subjects: Divisibility of numbers—(require pupils to determine by inspection the numbers which are divisible by 2, 3, 4, 5, 6, 8, 9, 10 and 11); factoring; greatest common divisor; least common multiple; and percentage. For quick perception work make a constant use of the DuShane number cards. Require pupils to originate and give written analysis of one or two problems daily. As a basis for the arithmetical composition work, write arithmetical expressions upon the black board, together with problems assigned from the arithmetic, page 326.

Express by formula the process of solving problems 25 and 26 on page 92; thus, (25) $46\frac{3}{4}$ yds. + 64

and $5/8$ yds. + 76 and $1/2$ yds. = ? \$127 and $7/16$ + \$226 and $5/8$ + \$312 and $2/3$) = ?

(26) \$25 and $7/8$ — (6 and $1/2$ + 2 and $1/5$ + $3/4$) = ?

(3) Combine the numbers of the above problems in a single problem using only the unit figures in each term of problem 25; and in problem 26, instead of using the term 25 and $7/8$, substitute the answer to problem 26 introduce the principles of the remaining part of the problem; thus, A merchant has three lots of cloth; in the first lot he has 6 yds., in the second 4 yds., and in the third 6 yds. Desiring to sell the cloth, he offers it at the rate of \$7 per yard, but finally reduced the price to \$6 per yard, and was offered but \$2 per yard. He finally agreed with the purchaser to take the average of the three prices for the selling price; after spending \$6.50 for a coat, \$2.20 for a hat and 75c for gloves, how much money had he left?

Pupils may be led to “think mathematically” by the use of simple numbers. The teacher should therefore avoid the use of large numbers in arithmetical calculations. Short methods in multiplication should receive careful attention.

Second Month.—Multiplication of fractions, page 369.

Third Month.—Decimals and Percentage, from 381 to 402. Omit the use of formulas in Percentage. It should be constantly borne in mind that practical problems should be selected for class drills as far as possible.

Fourth Month.—Multiplication and division of decimals. Supplement by making a practical application of the tables for Dry Measure, Avoirdupois Weight and Long Measure. Continue to drill upon the oral work in percentage, and the application of percentage to 424, omitting all formal work.

Fifth Month.—Page 442. Omit all formal work in the application of percentage.

Sixth Month.—Decimal fractions. Continue to review the exercise of factoring numbers at sight. Make use of exponents; thus,

Factors of $23,328 = 2^5 \times 3^6$. Show by numerous ex-

amples that the difference of any two numbers in a series is either the greatest common divisor or a multiple of the greatest common divisor of all the numbers. For example: Find the G. C. D. of 84, 126, 462. Find the difference between any two. For convenience the numbers 84 and 126 are selected. The difference is 42; $42 = 3 \times 2 \times 7$. These factors being common to the respective numbers, their product, 42, is the G. C. D. of the numbers 84, 126 and 462. Combine principles from the review with the advance, in problems for rapid work. In finding the least common multiple of 84, 126, 462, make use of the principle of G. C. D., factoring and cancellation as follows: The G. C. D. of 84 and 126 is $126 - 84 = 42$. Dividing one of the numbers by 42, and multiplying by the other, the multiple is found to be 2×126 .

The problem now stands: Find the multiple of (2×126) and 462. The difference between these two numbers is 210. $210 = 3 \times 2 \times 7 \times 5$. The factors 3, 7, 2, being common to both numbers, their product is the G. C. D. of the numbers. Divide as before, making use of the principle of cancellation. The problem reads,

$$\frac{252 \times 462}{3 \times 7 \times 2} = ? \text{ L. C. M.}$$

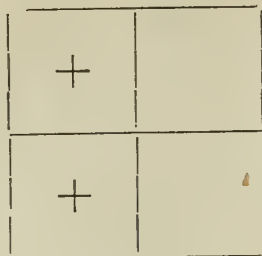
Cancelling, we have for the least common multiple of the numbers, 2772.

Carefully drill on the following plan of stating problems for addition and subtraction of fractions: Find the sum of $\frac{3}{5}$ and $\frac{7}{8}$; the difference between $\frac{3}{8}$ and $\frac{3}{11}$; written,

$\begin{array}{r} 3 \quad 24 \\ \hline 5 \\ 7 \quad 35 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \quad 33 \\ \hline 8 \\ 3 \quad -24 \\ \hline 11 \quad 9 \\ \hline 88 \end{array}$
$\begin{array}{r} 59 \quad 19 \\ \hline 40 \quad 40 \end{array}$	

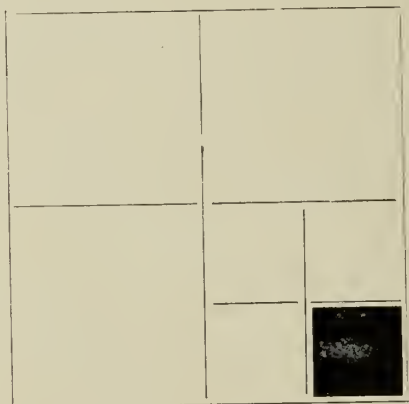
Measurements continued.

Seventh Month.—Measurements. Continue to give practice in arithmetical composition work. Combine the review with the advance as heretofore suggested. To illustrate: The common and decimal fraction may be combined thus: (1) How many hundredths in $\frac{2}{4}$? Pupil may draw diagram for demonstration.



(2) $1/8$, $1/4$, $1/6$, $1/32$, etc., are respectively what decimal part of $1/2$? Continue to use diagrams as above.

(3) What decimal part of the following diagram has been marked out?



Continue this exercise with various parts of the unit.

(4) What fractional part of the unit is expressed by the following: .5 .125 .625 .16 and $\frac{2}{3}$. (5) Combine measurements, fractions and decimals thus: (a) How many gills in .25 of a pint? (b) How many inches in .16 and $\frac{2}{3}$ of a foot? (c) Compare .16 and $\frac{2}{3}$ of a foot with $\frac{1}{6}$ of a yard. (d) Compare .18 and $\frac{2}{3}$ of a day with $\frac{1}{3}$ of an hour. (e) Compare the fraction $\frac{3}{8}$ with the whole and the decimal parts of the diagram; as, $\frac{3}{8}$ is .375 of 1; .42 and $\frac{6}{7}$ of $\frac{7}{8}$; .5 of $\frac{6}{8}$; .75 of $\frac{4}{8}$; $\frac{3}{8} = 1$; 1.5 of $\frac{2}{8}$; $3 \times \frac{1}{8}$. Continue this exercise with the unit divided into different fractional parts.



Eighth Month.—Profit and Loss. Continue to give practice in observing the relation of numbers. Show the relation existing between addition and multiplication; division and subtraction. For review purposes make a daily use of some of the following cards: DuShane, Shove, or Smith's Rapid Practice Arithmetical Cards.

GEOGRAPHY.

First Month.—North America. In this grade, as in previous grades, it will be necessary to use the globe and maps in order to (1) direct the observation of the pupils to the world as a whole. (2) Every point observed should become the center around which closely associated ideas should be grouped. (3) On an outline map previously prepared, begin a progressive study of North America. (4) Include coasts, mountains, rivers, physical features, rainfall timber growth, products of the soil and industries. (5) Give a brief history and the striking characteristics of the continent. (6) Compare North America with other continents, noticing the following points: size, coast, surface. Take an imaginary trip around the coast. Compare mountains and rivers. (7) Lead pupils to see that the various forms of life depend upon the climate. (8) Summarize by use of diagram: Lakes, names, location, inlet, outlet. Mountains: chains, names, location, direction of chains and location of high peaks. Sounds, straits and channels; waters connected and separated. Isthmuses: names, countries connected, water separated. Principal islands: names, situation, water surrounding. Rivers: names, source, direction waters entered. Gulf and bays: names, location and connection.

Read suitable books of travel and short stories of history bearing upon immediate work in hand.

Second Month.—Continue the progressive map of North America, including political divisions, cities, principal railroads and climate. The following outline of the climate of North America, taken from King's "Methods," page 296, is suggestive of what may be done in the way of summarizing some of the principal facts concerning the climate of North America: (Remember that such outline, to be of value, must be developed by the pupils.)

CLIMATE OF NORTH AMERICA.

Belts.	Countries.	Causes.	Facts of Climate.
Northern ..	Greenland, British America (north of the height of land); Alaska (northern part.)	LATITUDE; north winds; ice and snow; polar currents (eastern); Japan current (western); west winds	FRIGID—The cold region; ground frozen during the year; Hudson Bay open only six weeks; LONG NIGHTS; snow falls every month
Central	United States; British Columbia; Canada. Alaska (southern part.)	LATITUDE; Mountains; moist winds from Gulf of Mexico and Atlantic Ocean, from Pacific and Rocky Mountains. Counter trade winds on Pacific; gulf stream; Japan current; elevations; plateaus.	TEMPERATE—Four seasons. Atlantic Coast and lower half of Mississippi Valley, moist; Central Plain, less moist; between Rocky Mountains and Sierra Nevada and Cascade Range, VERY DRY. Two seasons in California—cool summers and warm winters; snow seldom seen in San Francisco.
Southern...	Mexico, Florida, West Indies, Central America.	In or near the tropics; abundance of RAIN in heavy, daily showers; elevations in Mexico.	TORRID—Two seasons; temperate in parts of Mexico on account of elevation.

Third Month.—Continue to study North America by outline. Products (agricultural, manufactured and mined); exports, imports and government.

Fourth Month.—Complete the study of North America with review. The relation of North America to other continents. Read extracts from different books of reference upon the following topics: Greenland, The Polar Regions, Big Trees, Yosemite Valley and Yellowstone National Park.

Fifth Month.—Begin geographical map of South Am-

erica. Continue to review the topics for comparative geography. Observe and index on a progressive map, the points of similarity and difference between North and South America. Use stencil in drawing progressive map.

—Comparisons of North and South America.—

NORTH AMERICA.	SOUTH AMERICA.
Pacific Highlands	Pacific Highlands.
Labrador	Guiana.
Rocky Mountains	East Cordilleras.
Sierra Nevada	West Cordilleras.
Central Basin	Plateau of Bolivia.
Appalachian Mountains	Plateau of Brazil.
Cape Charles	Cape St. Roque.
Baffin's Bay	Caribbean Sea.
Great Salt Lake	Lake Titicaca.
Mackenzie River	Orinoco River.
Yukon River	Magdalena River.
St. Lawrence River	Amazon River.
Ottawa River	Negro River.
Mississippi River	La Platta River.
Red River	Salado River.
Arkansas River	Vermejo River.
Platte River	Pilcomayo River.
Ohio River	Parana River.
Missouri River	Paraguay River.
Rio Grande River	Colorado River.
Mackenzie Valley	Orinoco Valley.
Mississippi Valley	La Platta Valley.

Sixth Month.—Study map of political divisions, lines of commerce and climate of South America. Follow the plan given for North America in summarizing the facts concerning the climate of South America.

Seventh Month.—South America; products, government, exports, imports and educational advantages.

Eighth Month.—South America. Its relations to other continents. Carefully review the geography of the Western Hemisphere with a map drawn by parallels and meridians. See to it that the pupil has a proper appreciation of distances on the map.

SPELLING.

Note all previous suggestions, and continue the work in spelling as therein indicated. An occasional oral drill is valuable, but, for the most part, the written exercise is better.

See reading, fifth grade, second month.

Insist on correct pronunciation in spelling, the same as in reading.

See reading, fifth grade, fourth month.

PHYSIOLOGY AND HYGIENE.

Heart and circulation. Use beef's heart to show structure.

The flow of the blood in the body.

Study heart beats; pulse and wrist, neck and temples. Take measurement of chest and expansion in inches. Activity wears out the tissues of the body. Show the necessity of furnishing suitable material for growth, such as food, drink and air. The effect of alcohol and narcotics upon the tissues.

SIXTH YEAR.

READING.

Stories of Great Americans. Kipling's Jungle Book, second series. The reading lesson should be made the source of thought, information and language culture. Thought may be developed by a careful series of questions. All questions should be brisk and pointed. Frequently test pupils in sight reading from magazines, books and papers. Selections may be read in class from Hawthorne, Alcott and Trowbridge. Much of the reading may be taken as a basis for the language work. Pupils who talk well, as a rule read well. Occasional drills upon phrase reading may be introduced. In this exercise pupils should be afforded an opportunity of calling words and entire sentences at sight, until the mechanical work of reading may be performed without effort. Every school exercise which quickens and sharpens the sense of sight, aids the pupil in becoming a correct and rapid reader.

Continue to give daily practice in sight reading. Frequently assign subjects to be read and reproduced within

a stated time. Phrasing and phonetic spelling should receive attention. Encourage home reading. In the recitation, give special attention to articulation, pronunciation, expression and attitude.

The supplementary reading for the month will be largely confined to the geographical reading as outlined for the previous month's work. To the end that the reading may be directed to the best advantage, it is necessary that each teacher should make a close and extensive acquaintance with the general literature bearing upon all departments of the grade work. For further suggestions as to the method and plan of teaching the subject of reading and spelling, consult the assignments made for previous grades. From the Sixth Grade much of the reading should be based upon culture study.

Continue the supplementary reading as previously suggested. The lessons should be so conducted as to furnish a suitable means of cultivating the voice, quickening the intelligence, strengthening the observation and enlarging the vocabulary. To this end the teacher should make careful preparation upon each lesson as a whole before attempting to conduct the recitation. The comparison of passages from different authors is an inexhaustible source for the development of thought and interest. Do not spend too much time in discussion. See to it that such exercises are conducted in a prompt, brisk and business-like manner, and that the undivided attention of each pupil is given to the subject under consideration. Finally, pupils of this grade should read easily and naturally the contents of the printed page.

LANGUAGE.

First Month.—Continue to develop all definitions and rules used throughout the work. The technical instruction should still be incidentally introduced. Give daily practice in the use of the verb: (a) tense, person and number. (b) mode, indicative and potential. The following books may be studied as a basis for language work in this grade:

Kipling's *Jungle Book*, Second Series.

Lamb's Tales of Shakespeare.

DeGarmo's Language Work, No. 4.

Hawthorne's Grandfather's Chair.

Scott's Ivanhoe.

Snow Bound.

Evangeline.

Autobiography of Ben Franklin.

Second Month.—Continue to closely relate the language work, both oral and written, with other lessons. Make a general review of all technical instruction heretofore introduced, laying special stress upon the proper use of transitive and intransitive, regular and irregular verbs.

Continue the study of some work such as the "Jungle Books." Lead pupils to get the thought, to observe the choice use of words, clauses and sentences.

Third Month.—Continue to write reviews of the various subjects taught in the course, selecting largely from the oral lessons, experiments, geographical topics and the course in literature.

Continue to introduce the technical work from the advance and the review as suggested. Give special attention to verbs; tense, person, number and mode.

Fourth Month.—Incidental instruction on the verb completed. Continue the work previously suggested upon the special study of some book selected from the outline in literature.

Fifth Month.—Carefully review the verb as applied to oral and written work based upon the general work of the various grades. Continue to give special attention to letter writing. Write a letter to a friend who has loaned you a book, after the following outline: "Return with thanks. Well pleased. Learned much. Mention two or three points in the central thought as presented by the author. Ask for another book. Story of the Trojan War preferred. Request an early answer."

Use proverbs as subjects for composition work: "Look before you leap. Luck lies in bed and wishes the postman to bring him news of a legacy. A rolling stone gathers no moss."

Biographies of the pioneer explorers of Montana and the extreme west may be read and reproduced by pupils as oral and written exercises. All possible devices for graphic presentation should be used; such as diagrams, maps and pictures. Correct all errors in language, and insist upon full and original expression.

Sixth Month.—It should not be the purpose of the teachers in this grade to teach much technical grammar. The requirements as outlined should be incidentally introduced and used in the language and composition exercises. Continue the study of phrases and conjunctions.

Seventh Month.—The diagram may be used as a means to the understanding of the English sentence. Constant practice in all forms developed.

Eighth Month.—Complete the study of phrases, clauses and sentences. The teacher should be discriminating and watchful in regard to the choice and purity of the pupils' language. Write at least one lesson or composition per week. Strive to assign subjects which will cause the pupil to observe and reflect. Ideas gained through individual observation "take hold of the imagination and sink into the memory." Do not accept carelessly prepared or slovenly papers. Such work should be at once handed back to the pupil for correction. The recitation should be as informal as possible.

Continue to make use of the literature, geography and science work as a basis for composition work.

ARITHMETIC.

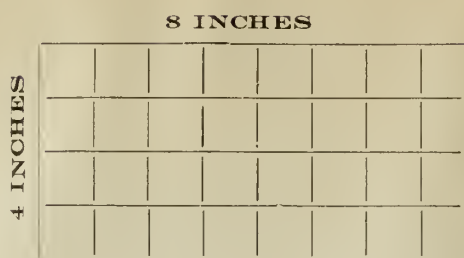
First Month.—Page 439. Measures, Profit and Loss and Interest. Omit all other formal work in Percentage.

Second Month.—Measurements, Longitude and Time, and Denominate Numbers continued.

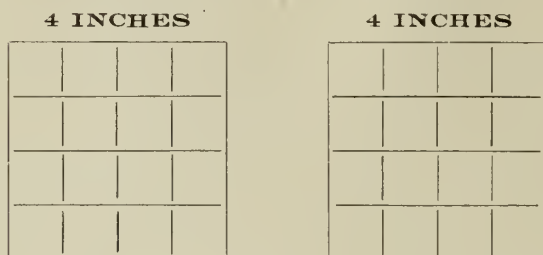
Third Month.—Measurements continued. See pages 461, 462, 471, 503 and 504. Contrast the terms used in the measurement of solids with multiplication. Make a systematic study of the plane surfaces which may be enclosed by three and four straight lines.

(See Bailey's Arithmetic.)

Develop the relation of the rectangle to the triangle; thus,

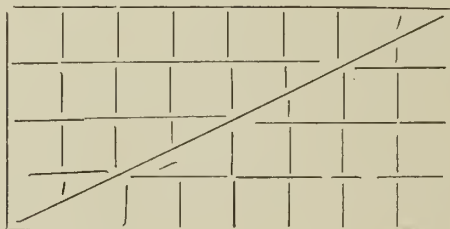


Fold the paper upon which the diagram is drawn, containing the 32 square inches, into two equal parts; thus,



Find number of square inches in each part.

Fold in some other way to have just one-half the area of the rectangle; thus,



Continue the mental arithmetic upon parallel work. Frequently give drill on short methods or multiplication. Pupils should have a thorough knowledge of the aliquot parts of 10, 100 and 1000.

Fourth Month.—Measurements. See pages 506 to 519.

Fifth Month.—Measurements and Percentage, including the base and percentage given to find the rate, amount and difference.

Review all previous oral and written work, especially fractions, measurements, greatest common divisor, least common multiple and the application of the principles of each. For oral work complete percentage.

Do not take up the time of the recitation with lengthy

solutions. Teach pupils to "think mathematically." Require pupils to originate one or two problems daily. This work is invaluable, not only as a means of developing mathematical power, but as a language lesson as well.

Sixth Month.—Applications of percentage, including Interest reviewed.

Continue the mental drill in fractions and aliquot parts, multiplication and division. Combine the principles of fractions with percentage for daily practice; as, $\frac{5}{4}$ of 20 is 125% of what number? $\frac{8}{7}$ of 49 is $\frac{8}{3}$ of what number. Write $\frac{1}{2}$ of 1%, etc. Develop formulas for square and cubic measure. Do not require pupils to commit to memory tables of weights and measures—teach them incidentally. The teacher should not rely upon the text-book in presenting these subjects; the tact of the teacher is shown by the ingenious manner in which the review is combined with the advance for daily drill. The review should be so constantly combined with the advance that the pupils are made familiar with the practical use of all principles heretofore introduced. In the following plan, the object is to review a few of the simple principles of mensuration in a drill upon the subjects of fractions and percentage.

With the accompanying diagram placed upon the blackboard, questions like the following may be asked:



- (1) The diagram represents a bushel of wheat; (a) What is 1. (b) What is 2? (c) 2 is what % of a bushel?
 (2) The diagram represents a gallon of molasses; (a) What is 1? (b) What is 2? (c) What is 4? etc.

(3) At a dollar a gallon what is the cost of 5? Of 4? Of 2? etc.

(4) Let the diagram represent a pound of sugar; what is 1? What is 2? What is 3?

(5) It now represents a day of twenty-four hours; what is 1? 2, 3, 4, 5, etc.?

Seventh Month.—Continue the work upon the application of percentage, including Profit and Loss, with mental arithmetic upon parallel work.

Eighth Month.—Interest, Profit and Loss. Hold the pupils responsible for the independent use of all principles heretofore taught. Develop the relation of terms, forms and surfaces; that is, lead pupils to observe the relation of the terms in multiplication, square measure, cubic measure and liquid measure. (2) By use of the blocks, develop the relation of lines and surfaces of the following: Rectangles, triangles, circles, cones, prisms and pyramids.

GEOGRAPHY.

First Month.—The New England and Middle States may be taken up according to King's outline as follows:

1. Brief History.
2. Striking Characteristics.

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|-------------------|---|--|
| 3. Position, etc. | { | <ol style="list-style-type: none"> 1. Hemispheres. 2. Zones. 3. Latitude and Longitude. 4. Shape. 5. Absolute and Comparative Size. 6. Diagram, Outline-Progressive Map. |
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|-------------|---|--|---|---|
| 4. Surface. | { | <ol style="list-style-type: none"> 1. Highlands. { 2. Lowlands. { 3. Draw Profile. 4. Draw and Print on Progressive Map. | { | <ol style="list-style-type: none"> 1. Mountain Systems. 2. Plateaus. 3. Deserts. 1. Plains. 2. Lowlands on Cost. 5. Peaks. 6. Heights. 7. Volcanoes. 8. Analogies. |
|-------------|---|--|---|---|

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|--------------|---|---|---|--|
| 5. Drainage. | { | <ol style="list-style-type: none"> 1. Water Partings. 2. River Systems. 3. Lakes. 4. Draw and Print Names on Map. | { | <ol style="list-style-type: none"> 1. Source. 2. Course. 3. Length. 4. Navigable. 5. Branches. 6. Peculiarities. |
|--------------|---|---|---|--|

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|-------------------------|---|---|
| 6. Political Divisions. | { | <ol style="list-style-type: none"> 1. Name in Order. 2. Capitals. 3. Principals Towns. 4. Print names on Map. |
|-------------------------|---|---|

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|------------------------|---|----------------------|---|----------------|
| 7. National Divisions. | { | 1. Border Waters. | { | 1. Oceans. |
| | | | | 2. Seas. |
| | | | | 3. Gulfs. |
| | | | | 4. Bays. |
| | | | | 2. Straits. |
| | | 2. Projections, etc. | { | 1. Peninsulas. |
| | | | | 2. Capes. |
| | | | | 4. Islands. |
| | | 3. Isthmuses. | | |
| | | 4. Print Names. | | |
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| 8. Climate. | { | 1. Causes. | { | 1. Latitude. |
| | | | | 2. Elevation. |
| | | | | 3. Mountains. |
| | | 4. Slope. | | |
| | | 5. Winds. | | |
| | | 6. Moisture. | | |
| | | 7. Currents. | | |
| | | 8. Surface. | | |
| | | 2. Peculiarities. | | |
| | | 3. Healthfulness. | | |
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- | | | | | |
|----------|-----------|---|---|----------------|
| 9. Life. | { | 1. Vegetables. | { | 1. Races. |
| | | 2. Animal. | | 2. Population. |
| | | | | 3. Occupation. |
| | | 4. Language. | | |
| | 3. Human. | 5. Manners and Customers. | | |
| | | 6. Education—Literature, Science, Arts. | | |
| | | 7. Religion. | | |
| | | 8. Government. | | |
-
10. Productions.—Printed on Progressive Map.
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- | | | | | | |
|---------------|-----------|------------------------|---|-------------|-----------|
| 11. Commerce. | { | Foreign | { | 1. Exports. | |
| | | or | | 2. Imports, | |
| | Domestic. | 3. Commercial Towns. | | | |
| | | 4. Routes of Commerce. | | { | 1. Land. |
| | | 5. Peculiarities, etc. | | | 2. Water. |
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12. Prominent cities.
 13. Journeys.
 14. Comparisons.—Throughout every topic.

Develop causes of rain, ocean currents, hail, snow, dew and frost. For these development exercises an apparatus as heretofore explained may be introduced.

Second Month.—South Atlantic, Gulf and North Central States are to be presented according to the outline given in the previous assignment.

Third Month.—Western Pacific States and Territories. Make a study of a few of the largest cities of the United States. Use comparisons freely. (1) Compare the agricultural, mineral and manufactured products of the Southern and Western Pacific States. (2) Compare the Colorado Canyon with the Connecticut Valley. (3) Compare the Colorado and Mississippi Rivers.

Fourth Month.—Complete the geography of the United States. Compare the eastern and western parts, also

the northern and southern parts of the United States as to climate, products and industries. Name the plants, animals and minerals of each section. Give special attention to comparative work, routes of travel, and written descriptions. Prepare a zone map, and complete the progressive map by indexing the products of the United States. (See King, pages 119 and 139.)

Fifth Month.—Characteristics of Europe, Asia, Africa, Australia, North and South America. Carefully review the previous work. See to it that the subject matter of all the previous work is combined with the advance for daily instruction; for instance, compare the surface of the county with that of the state or continent. Compare the climate of Montana with that of the British Isles. Which, if any, of the laws governing the climate of Montana, affect the climate of the British Isles? Which laws of climate, if any, are found to modify the climate of the British Isles, but do not affect the climate of Montana?

Take imaginary journeys. At least one good book touching upon the work of the grade should be read during the term. For composition and language work a constant use of geographical subjects should be made.

Sixth Month.—Map of Europe begun, with coasts, rivers, mountains and political divisions. Continue to combine the advance with the review as to climate, surface, products, occupation and educational advantages of the people. Locate and index cities, giving routes of travel.

Develop the following characteristics of atmosphere by experiments: (a) That atmosphere is a substance; (b) has weight; (c) is capable of being expanded and compressed; (d) is elastic; (e) heated air is lighter than cold air; and finally, by means of the cigar box experiment, illustrate atmospheric currents.

The following general characteristics for each of the continents should be tabulated as a review of the previous month's assignment.

Asia: Many projections from a large trunk; great deserts; mountains rise from plateaus; its nearness to other

continents; has greatest size; greatest population; largest and coldest country.

Europe: Many projections from a small trunk; greatest comparative coast line; mountains rise from lowlands; ranks first in importance.

Africa: Oval shape; less coast line; difficult of access; dryness; great deserts; abundance of animal life; animals fierce and powerful; great extent of plateaus.

South America: One-sidedness; great rains, large rivers; abundance of vegetable life; isolated location.

North America: Its completeness; no feature true of other continents but can be traced in North America—plateaus like Asia, mountains like Europe, vegetation like South America.

Australia: Poverty; isolation; behind the times generally.

Seventh Month.—Map of Europe. Begin the study of cities, railroads, climate, productions and government, to be studied according to the outline given in King's "Methods and Aids in Geography," page 48.

Eighth Month.—Study Europe; its relation to other continents; its educational advantages. Give supplementary work. Take imaginary journeys, and continue to prepare written descriptions of the same.

SPELLING.

Some of the simple rules in spelling should be developed, and a variety of words used as illustration. Pronounce words correctly and distinctly, and but once as far as possible. All words should be written in the spelling blanks with ink, and great care exercised in the writing.

For tests and written reviews a good plan is to have the pupils write the words in blank books specially adapted to the purpose. Review the words misspelled.

Observe previous suggestions. Require pupils to correct all misspelled words, whether written on the board in the Arithmetic lesson or otherwise.

SEVENTH YEAR.

READING.

Stories of American Life and Adventure. Stories of Montana. Give daily practice in silent reading. For this exercise assign lessons to be read and reproduced within a stated time. Continue to give practice in phrasing and phonetic spelling. Encourage home reading. Give special attention to articulation, pronunciation, expression and attitude. Make use of the grade literature.

The teacher should make an extensive acquaintance with the literature adapted to Seventh Grade pupils. Mary E. Burt's "Literary Landmarks," Emily J. Rice's "Course of Study in History and Literature," and Chas. A. McMurry's "Special Method for Teaching History and Literature in Common Schools," will be invaluable helps in this connection. The introduction of some of the complete classics supplementary to the reader, will not be objectionable. The supplementary reading should be selected primarily with a view to increasing the literary tastes of the pupil and secondarily to throw light upon the other works of the course.

Require pupils to write at least one selection per week from some standard author, to be followed by a written review or biographical sketch of the author. Check all tendency towards listless or mechanical reading. Question pupils upon sentences or stanzas until the art of expression has been acquired. Continue to give occasional drills upon silent reading, followed by oral or written reviews. Continue the drill upon words.

The reading assignments for the term may be summarized as follows: (1) Frequently practice in sight reading from other books suited to the grade. (2) Make a constant use of the dictionary and continue to study the force of the diacritical marks found therein. (3) Give

frequent exercises in phonation. (4) Pay especial attention to meaning of words and contents of lessons. (5) Give necessary explanations to historical, biographical, scientific and other allusions. (6) Require pupils to reproduce explanations given at subsequent recitations. (7) Give occasional drills in silent reading, followed with an oral review of the same.

LANGUAGE.

First Month.—Continue to make a practical use of verbals, prepositions, phrases, nouns and object-complements. With the text-books in the hands of the pupils, attention may be called to the use of simple diagrams as well as written and verbal analysis. This work will cover all the simple forms.

Discuss the Parts of Speech in connection with conversations along lines suggested in other grades. The work being more advanced, pupils will be expected to make closer discriminations. Continue to drill upon letters and business forms. Pupils should write compositions of 200 or 300 words at least once each week.

Second Month.—Continue to discuss phrases, conjunctions and sentences as suggested in the previous outline.

Third Month.—Study modifiers of the subject and predicate. Choice descriptions, narratives and expositions from literature should be made prominent. Require pupils to pass judgment by determining why one selection is to be preferred to another. In fact, all subjects for composition writing should be selected with a view to exercising the child's power to discriminate and to pass direct judgment as indicated in the foregoing exercise.

The following may occasionally be given for written reviews: (1) Correct and give reasons for correction: (a) Who is you letter from? (b) He spoke for you and I. (c) He is a friend whom I am indebted to. (2) Give short extracts from a letter to be condensed and properly expressed.

Fourth Month.—Expand phrases into clauses. Con-

tract clauses into phrases. Expand words into clauses. Note all previous suggestions.

Fifth Month.—Sentences classified with respect to meaning. Participles and infinitives review. As a basis for this work make use of historical topics, biographical sketches and geographical reviews. Attention should also be given to the writing of notes of invitation and acceptance. Give practice in writing brief abstracts of what pupils have read. In a letter to a friend, give a description of a real or imaginary journey taken. In fact, the composition exercise should be an important part of the daily work.

Sixth Month.—Complex and compound sentences. Continue to develop outlines for composition exercises something after the following plan: "The Psalm of Life" is here selected for the purpose of illustration only. Care should be taken to direct the pupil to a thoughtful consideration of the stanza by asking only such questions as are absolutely necessary for this purpose; thus (1) Count the exhortative and exclamatory sentences in the first stanza. (2) Supposing the question to be stated for debate: "Resolved, That life is but an empty dream," who in the stanza takes the affirmative and who the negative side of the question? (3) What are some of the points made on the negative side of the question? (a) Slumbering souls are dead. (b) Things are not what they seem to such people. (c) People who maintain such thoughts are poetical "whiners." (d) People in this disconsolate mood are disposed to quote Gen. 3:19. (e) Declared these words are not spoken by the soul.

Third stanza: People are told not to drift with the tide but should take their destinies into their own hands.

Seventh Month.—Complex and compound clauses. Continue to talk over the subject matter of the course with the pupils, as a basis for written reviews.

Define grammatical terms by properly using the same in sentences. Without materially changing the thought, substitute other words for the words and phrases under-

lined: Mr. Smith found it necessary to curtail his incidental expenses in order to save his home. He was soon so benefited by his reformed habits that he was not only enabled to abandon former customs, but rapidly gained in health and wealth.

Eighth Month.—The Parts of Speech subdivided. Continue to define technical terms in grammar by the proper use of words in sentences. Effort should be given to secure versatility of expression. Reproduction exercises may be used to good advantage. A careful and thoughtful study of good selections will help very much. Preserve at least one paper from each pupil per week.

Suggestive Material:—

Stories of Our Country.

Peasant and Prince.

The Christmas Carol.

California and Oregon Trail.

Scudder's Life of Washington.

Vision of Sir Launfal.

Lady of the Lake.

Old Curiosity Shop.

Tales of the White Hills.

ARITHMETIC.

First Month.—Supplement the text in simple applications of percentage. Keep up a constant review throughout this grade of previous work. Give frequent drills in practical problems.

Second Month.—The applications of Percentage, including the six per cent. method in Interest.

Third Month.—All work in text on Interest completed.

Fourth Month.—Discount begun.

Fifth Month.—Measurements and applications of Percentage reviewed.

For original book work require pupils to express arithmetical operations and finally to combine two or more expressions in a single problem. Problems 9 and 11 on page 261, Walsh's Grammar School Arithmetic, are taken for the purpose of illustration. Express the arithmeti-

cal operations in each case; thus,

$$\begin{array}{r} \$1.25 \div \frac{25}{3} = ? \qquad 164 - 87 = ? \end{array}$$

Combine the two operations in a single problem. In so doing add the use of one of the following signs: +, —. Require the pupil to originate a problem making use of the numbers as indicated; as, Oranges are selling 3 dozen for 25 cents; Henry has \$1.25 worth of oranges in a basket. In a second basket he has 164 oranges. He sells 87 oranges from the second basket; how many has he remaining?

The principles of the review should be constantly combined with the advance for daily drill. Short methods in multiplication should receive careful attention. Continue to give practice in observing relation of numbers and operations. Lead children to observe the relations existing between addition, multiplication, square measure and cubic measure.

When pupils properly understand the relation existing between numbers and operations, they will be able to lessen the labor of solving problems, by making practical application of simple principles; thus, $976 \times 189 = ?$ Multiply through by 9. Since 9 is one-half of eighteen, multiply the first line in the product by 2, which gives in a single line the product obtained by multiplying the multiplicand by 18.

Make a constant use of the DuShane cards.

Sixth Month.—Text, applications of Percentage to Exchange.

Continue to combine the review principles with the advance for daily drill. To illustrate: In assigning problems like the following, require pupils to add; (a) The purchaser pays tax at the rate of $3\frac{1}{2}$ per cent. of the purchase price of the property. (b) He pays premium for insurance on $66\frac{2}{3}$ per cent. of the valuation of the property; (c) The fractional part of a year should be considered as a whole year in computing tax and insurance. What is the total amount paid by the purchaser

at the expiration of the time stated in the problem?

Problem: A man sold his house and lot for \$12,500; the terms were, \$4,000 in cash on delivery, \$3,500 in 9 mo., \$2,600 in 1 yr. 6 mo., and the balance in 2 yr. 4 mo., with 6% interest. What was the whole amount paid?

Continue arithmetical composition work.

Mental Arithmetic.—Select problems for parallel work from Brook's New Normal Arithmetic. For rapid mental drills the following plan will be found valuable for pupils in this grade: (1) The pupil should be led to observe that any sum of money placed at interest at the rate of 6 per cent. will double itself in 200 months. Taking this as a basis for our calculation, a table or diagram may be placed upon the board as follows:

1	=	200 months.
1/10	=	20 "
1/100	=	2 "
1/1000	=	.2 " or 6 days.

With table before the class, questions like the following may be asked:

(1) What is the interest on \$267.60 for 1 yr. 4 mo. and 18 days at 6 per cent.? At 9 per cent.? (2) What principal will gain \$173.97 in 4 yr. 4 mo. at 6 per cent.? At 12 per cent.? (3) In what time will any number double itself at 3 per cent.? (4) In what time will \$9,750 gain \$780, interest at 2 per cent. a month? (5) How large a sum in the savings bank at 6 per cent. interest will give a yearly income of \$1,000?

Seventh Month.—For special drill combine the principles heretofore taught, in problems for rapid mental work. In originating problems for mental or written work, strive to avoid puzzles or problems of peculiar construction. All problems given should develop and strengthen the power to think. Give pupils an opportunity of observing the relation between percentage and other arithmetical operations, such as multiplication, square measure, cubic measure, commission, insurance, taxes and interest. If the fractional work in percentage has been well done, the terms and formulas may be de-

veloped and used in the various applications of percentage; that is, develop the use of the five terms in percentage and show that any two being given, the third may be found. Lead children to see that by combining, ten combinations may be made, and in each combination three terms are to be found, thus making it possible to have thirty formulas or different operations in percentage; thus,

Combinations.

$$\left\{ \begin{array}{l} a. b. \\ a. d. \\ a. p. \\ a. r. \end{array} \right\} \left\{ \begin{array}{l} b. d. \\ b. p. \\ b. r. \end{array} \right\} \left\{ \begin{array}{l} d. p. \\ d. r. \end{array} \right\} - p. r.$$

Formulas.

$$a. b. \left\{ \begin{array}{l} d. = b - (a - b.) \\ p. = a - b. \\ r. = (a - b). \end{array} \right.$$

b

In like manner pupils should write the three formulas for each of the above combinations.

Eighth Month.—Ratio and Proportion applied. Continue to carefully review the work of the previous grades. Pupils in this grade should be thoroughly disciplined in the logic of arithmetic. Do not lose sight of the fact that constructive arithmetical exercises will do much towards righting the wrong which may have been done by too much abstract teaching.

GEOGRAPHY.

Begin a progressive map of Asia. Prepare lessons for topical recitation as shown in the previous grade.

The material gleaned from reading the following books will furnish most of the material for the topics as outlined.

Across Asia on a Bicycle.—Allen and Sachtleben. Three Vassar Girls in the Holy Land.—Mrs. Williams. The Boy Travelers in Egypt and the Holy Land.—Knox. Stories of China.—Mara L. Pratt. Siam and Java.—Knox. Java, the Pearl of the East. Our Boys in China.—French. Boy Travelers in Japan and China.

—Knox. The Bear Worshipers of Yezo.—Edward Greey. Young Americans in Japan.—Greey. Japan in History.—Griffis. A Japanese Interior.—Alice Mabel Bacon. • Boy Travelers in Ceylon and India.—Knox. Our Boys in India.—French. Zig Zag Journeys in India.—Butterworth. Stories of India.—Mara L. Pratt. Talks about India.—Harriet G. Brittan. The Land of Temples.—Mary Hield. Geographical Reader.—Johannot. Our World Reader.

Finish the progressive map of Asia. Complete according to the topical plan as previously outlined.

Continue the study of the following topics: Commerce, Prominent Cities, Journeys, Comparisons.

Pupils will doubtless be interested in reading some of the poems mentioned upon page 449, King's "Methods and Aids in Geography."

Progressive map of Africa completed according to outline. Give some talks upon principal points of interest and require pupils to prepare papers on events of recent occurrence. Keep a geographical scrap-book, as suggested in King, page 174. Make the lessons comparative with other continents throughout. See tabulations and illustrations in King, pages 158, 159, 160, 119, 170 and 187.

Study Oceanica according to outline, with a careful review of the geography of the several continents. Remember that the highest aim in the teaching of geography is not the mere "storing of the mind with the accumulated knowledge of ages, but to arm it with energy and skill." Instead of assigning tasks to be committed to memory, the work should be so assigned as to make the pupil the source of most of his information. Children may be led up through a series of observations to discover principles, and enabled to make deductions "with a vividness and joy attainable in no other way." "A fact discovered by the child for himself by his own direct observation, becomes a part of his being, and is infinitely more to him than if learned from hearsay or acquired from a text-book. The idea of discovery

should be encouraged in every way among children." The value of the work done by the skillful teacher cannot readily be determined by the routine examination. In testing pupils for promotion, very little attention should be given to subject matter that will enable the child to make use of geographical facts which may have been committed to memory. Skill in locating unimportant points should count for very little when compared with an ability to observe relations, to determine causes, or to properly interpret and express the language of the map.

Supplementary Reading:

Field, Henry M. From Egypt to Japan.

Taylor, Bayard. Land of the Saracens; or, Pictures of Palestine.

Weeks, Edwin L. From the Black Sea through Persia and India.

Champney, Mrs. Elizabeth (W.) Three Vassar Girls in the Holy Land.

Field, Henry M. Among the Holy Hills.

Knox, Thomas W. Boy Travelers in the Far East.

Macgregor, John. The Rob Roy on the Jordan.

Taylor, Bayard. Travels in Arabia.

Benjamin, S. G. W. Persia and the Persians.

Taylor, Bayard. Central Asia.

Kennan, George. Tent Life in Siberia.

French, Harry W. Our Boys in China.

Hart, Virgil C. Western China.

Percival, William S. Land of the Dragon.

Pratt, Mara L. China.

Corea, the Hermit Nation.

Bird, Isabella L. Among the Thibetans.

Angus, D. C. Eastern Wonderland; or, Pictures of Japanese Life.

Bacon, Alice M. Japanese Girls and Women.

Bacon, Alice M. Japanese Interior.

Griffis, William E. Japan in History, Folk Lore and Art.

Greey, Edward. Young Americans in Japan.

Greey, Edward. Young Americans in Yezo, and the Island of Karafuto.

Knox, Thomas W. Boy Travelers in the Far East; Japan and China.

Lowell, Percival. Souls of the Far East.

Morris, J. Advance Japan.

Butterworth, Hezekiah. Zig Zag Journeys in the Antipodes.

Knox, Thomas W. Boy Travelers in the Far East; Siam and Java.

Higginson, Mrs. S. J. Java, the Pearl of the East.

Bird, Mrs. Isabella L. Golden Chersonese and the Way Thither.

Bacon, Geo. B. Siam; the Land of the White Elephant.

Arnold, Sir Edwin. India Revisited.

Knox, Thomas W. Boy Travelers in the Far East; Ceylon and India.

Pratt, Mara L. India.

Baker, Sir Samuel W. Eight Years' Wanderings in Ceylon.

Baker, Sir Samuel W. Rifle and Hound in Ceylon.

Ballou, M. M. Foot-Prints of Travel.

Butterworth, Hezekiah. Zig Zag Journeys Around the World.

Mateaux, C. L. Peeps Abroad for Folks at Home.

Thompson, Frederick D. In the Track of the Sun.

World at Home. Book 6.

Baker, Sir Samuel W. True Tales for My Grandsons.

Brassey, Lady Anne. Around the World in the Yacht "Sunbeam."

Frith, Henry. Ascents and Adventures.

Headley, Joel T. Mountain Adventures in Various Parts of the World.

Vincent, Frank Jr. Through and Through the Tropics.

SPELLING.

Word-Analysis: Kennedy's "What Words Say."

In assigning lessons be sure to secure the interested attention of the pupils. With a keen interest and the

faculties alert, quite as satisfactory results may be secured in spelling as in other branches. The written words should be properly associated with the idea. In assigning lessons, write the word quickly but plainly upon the blackboard. After the child has been properly interested in the use of the word, erase and require him to write while he has a picture of the word in his mind. This exercise may be extended from the single word to the reproduction of an entire sentence. The teacher should so present the spelling lesson as to enable the pupil to form a clear mental picture of each word. By requiring pupils to hold the picture of words thus gained in consciousness, the ability to spell and write words is acquired. Try to form the habit of analytic observation in spelling as in other branches. . .

In addition to word-analysis, the teacher may combine the review with the advance in sentences for dictation exercises. After this work has been carefully criticised by the class, the sentences should be copied into blank books kept for this purpose. Different members of the class may occasionally be called upon to make a selection of words, from the review, to be used in the recitation.

Dictation exercises should frequently be given in which the spelling, punctuation and capitalization should be thoroughly criticised and properly corrected. Continue word-analysis.

(1) Require the regular exercises to be written with ink in the blank books used for this purpose. (2) Notice the spelling and meaning of important words in the regular reading lessons. (3) Words should also be selected from other subjects studied. (4) Select words written from dictation and use correctly in sentences. (5) Give occasional lessons on prefixes and suffixes. (6) Dictation exercises should be given frequently in which the spelling, pronunciation and capitalization should be thoroughly criticized and properly corrected.

HISTORY.

In connection with the supplementary work in reading, literature and geography, the foundations for the subsequent course in history should be laid. Children are fond of stories. Let them by means of stories of adventure and of historic incident become familiar with the main facts in the history of our country. Let them also become acquainted to a certain extent with the characters of many of the prominent Americans who have had so much part in the development of our institutions.

The teaching of patriotism by means of the abundant illustrations to be found, should receive careful attention. A love for the flag and a respect for its defenders and upholders should be instilled into every mind. The civil liberty and the blessings of free thought and free speech which are the possession of American citizens, can only be appreciated by those who know their cost. Those who know the least about our institutions are the ones who value them the least.

In previous grades a systematic study of biography has been introduced covering the important epochs of United States History. Through this means the text-books may now be approached and the pupil prepared for the fuller treatment of the subject. There is no better way of teaching the events and their relations in the period of discovery than through the tracing of the incidents in the life of Columbus. There is hardly an event in the period from the beginning of the French and Indian War to the close of Washington's Administration that may not in some effective way be linked with the life of Washington.

The greatest good the teacher can hope to accomplish in this work is to train the pupils to a proper method of study and to arouse interest and enthusiasm in the work. The division of the work into periods and a logical classification of the events in each period is of prime importance. In this outline course of study the classifications

of the text book in use in the state are adopted as a matter of convenience.

The particular division into periods that may be used is not a matter of vital importance. The important point is to select a division and then having one selected to teach that one thoroughly. The following arrangement is preferred by many:

The Aboriginal Period.

From the earliest times until the discovery of San Salvador by Columbus in 1492.

The Period of Voyages and Discoveries.

From the discovery of San Salvador to the settlement at Jamestown in 1607.

The Colonial Period.

From the settlement at Jamestown until the Declaration of Independence in 1776.

The Period of the Revolution.

From the Declaration of Independence until the inauguration of Washington.

The National Period.

From the inauguration of Washington to the present time.

Geography and history are inseparable and hence map studies should accompany the study of the text. Biography is very useful in helping to cluster events in their proper relations. It is useful also in that it brings in the movement of events by place relation rather than by a time classification.

The writing of sketches of events and of important movements is very much to be commended. The memorizing of the words of the text should be carefully avoided. Pupils should be trained to recast the thought in their own words. Great care should be exercised in training in the proper spelling and pronunciation of words. If the pronunciation and spelling of the word is not remembered the tendency is for the event or the person to whom the word applies to soon be faintly remembered if recalled at all.

The facts are important only as their relations are un-

derstood. No attempt should be made to teach isolated facts and dates. Dates should be taught sparingly,—only a few of the most important, and these the pupil should be required to give with unerring accuracy.

While topical recitations on the text are sometimes profitable, great care should be exercised to prevent the work becoming formal and a mere matter of routine. Pupils should be assigned subjects for investigation. Oral and written reports on these subjects should be made in the class.

Collections of historical material are very valuable in arousing interest. There is not a city or a community where some interesting material can not be found. Interest awakened in one theme will give energy in the investigation of others.

The time at the beginning will be spent most profitably in taking a preview of the whole subject. The division into periods, the reason for each division, the condition of geographical knowledge in Europe in the fifteenth century, the causes and results of the Intercolonial Wars, the causes of the Revolution, the adoption of the constitution, the causes and results of the 1812 war, the events leading to the Civil War and other similar topics should be discussed. In these lessons the pupil will get a good idea of the scope of his subject and will succeed much better in mastering the details than if he blindly undertook the work without this preliminary survey. This preview will also tend to unify the work and to give the pupil a better grasp on it as a whole.

Summarize a few of the important discoveries.

Review and complete outline of discoveries. Begin the study of colonies, including Massachusetts Bay Colony.

From the beginning of American History to the settlement of Jamestown. The nations that engaged in discovering, the lands claimed by each, the work of the individual discoverers are the important topics: although a little time should be devoted to the Northmen, the Moundbuilders, and to the distribution of the Indian

tribes. A sketch of the life of Columbus should be required from each member of the class; also a map of the world as known in 1490 and one on which the principal discoveries and voyages are traced.

Complete the settlement of the Thirteen Colonies. Pupils should be required to prepare at least one paper per week upon some prominent person or important event in history.

From the settlement at Jamestown to the first of the Intercolonial Wars. Particular attention should be paid to the colonial history of Massachusetts and Virginia. In these two colonies were planted the two great influences that were afterward to dominate in American institutions,—the Puritan and the Cavalier.

The county, the township, the town meeting, and the relation of church and state should each receive attention. Some character prominent in colonial life should be selected as a biographical study. Maps showing the colonial grants should be drawn.

Intercolonial Wars completed, with outline giving time, cause, principal events and results of each war.

From the beginning of the Intercolonial Wars to the Declaration of Independence. The order of causes, events and results is quite good while studying the Intercolonial Wars; but especial attention should be directed to causes and results. The causes of the American Revolution should receive careful treatment as well as the relation of the French and Indian War to the Revolution. If pupils are required to prepare a sketch of the life of Washington, it will be of great value in unifying the work in this period and that of the Revolution. Maps of the country at the beginning and at the close of the Intercolonial Wars should be required. These maps should especially show the changes in boundary lines.

EIGHTH YEAR.

READING.

Irving's Sketch Book. All requirements as to spelling, phonics and reading mentioned in previous work should be systematically reviewed. Much of the subject matter in the literature assigned for the year should be correlated with history. Continue previous work.

Continue to correlate the literature with the history. The development of a literary taste should be regarded as paramount, all else subordinate. Review Irving's Sketch Book, or some masterpiece of the literature used in the language work.

Whittier's "Snow-Bound" completed.

LANGUAGE.

First Month.—(a) Review all work done in previous grades. (b) Review Parts of Speech and their relations. (See all previous instruction in the course.)

Second Month.—Continue the review, laying special stress upon composition work.

Third Month.—Insist upon ample original exercises to illustrate all points in English. Constantly make use of the best thought material. Pupils gain most when under constant tension. Good thought material is the only incentive that will keep the strain at the highest working point.

Great freedom of discussion may be allowed. Assist pupils in cultivating a taste for good speaking and writing as well as for good literature. Arouse the curiosity and pupils will advance rapidly in these lines. Insist upon neatness, correct spelling and forms of writing. For suitable books see outline in literature. Supplementary work: "Practical Lessons in English," Chapter 4.

Fourth Month.—Make a careful review of all previous work.

Fifth Month.—Historical poems, speeches, etc., should

be given as subjects for talks and papers. Give special attention to written descriptions of journeys, real or imaginary. In these exercises stress should be laid upon punctuation and paragraphing. Pupils should be required to write at least one composition per week. Subjects should be chosen from biography, history, literature and science.

The work in this grade should embrace very much of the technical grammar; but pupils should be required to put a thought content into all illustrations they give. This exercise should be constant, as every form studied should have ample application in language of the pupil's own construction. To illustrate: Write a compound sentence, the modified predicate of the second member to contain a clause used as an object-complement and the object-complement to be modified by an adverbial phrase.

(2) Define the following by the use of words in sentences: (a) An adjective in the comparative degree. (b) A relative pronoun. (c) An intransitive verb. (d) An irregular verb. (e) A noun used in apposition. (f) An incomplete, intransitive verb. (g) An adjective to illustrate the attribute-complement.

Sixth Month.—Subjects like the following may be assigned as a basis for composition work: "A Visit to the Yosemite Valley." "Queer Customs of our Forefathers." Paraphrase a stanza from Gray's "Elegy."

Seventh Month.—In disposing of the classic selections which have been assigned for the term's work, the various technical points in grammar should be brought up for review, thus leaving a working knowledge of the subject fresh in the pupil's mind. The classic selections may also be examined for the purpose of observing the difference in forms used by the author in expressing his thought. Utilize as heretofore ideas gained from other studies as a basis for the composition work. Sufficient drills should be given in originating sentences as previously suggested, to make the pupils ready and accurate in recognizing and determining the relations between different elements in various sentences of the pupil's own

construction. The analysis of sentences should not be introduced as a mechanical form of study.

Eighth Month.—In completing the work of the grammar grades, pupils should be able to write very rapidly and accurately and at the same time express profitable thought. All lessons and topics should be reviewed by writing.

Continue to insist upon neatness, correct spelling and forms of writing.

ARITHMETIC.

First Month.—Begin simple applications of percentage. The review of the previous year's work should be carefully kept up by introducing the principles from the review with the advance for daily work. Pupils in this grade should be thoroughly disciplined in the logic of arithmetic. Give daily exercises in mental arithmetic.

Second Month.—Complete simple applications of percentage to Ratio and Proportion, omitting all difficult work from the text.

Problems similar to the following may be given for rapid work:

1. Find rate of commission when 50 cents is paid for a \$20.00 sale.

2. Find the amount of sales when a commission of 2 per cent. pays the agent \$24.*

3. Find the commission when \$980 is sent to be invested, the agent to receive $12\frac{1}{2}$ per cent. commission. What amount of money will be invested?

4. If apples costing $\frac{1}{3}$ of a cent are sold for $\frac{1}{2}$ of a cent each, what is the gain per cent.?

5. Bought an article for 5 cents and sold it for \$1.00; what per cent. did I gain.

The relation work in interest previously suggested should be carefully reviewed. With table before the class questions like the following may be asked:

1. What is the interest on \$267.60 for 1 yr. 4 mo. and 18 days at 6 per cent.? At 9 per cent.?

2. What principal will gain \$173.97 in 4 yr. 4 mo. at 6 per cent.? At 12 per cent.?

4. In what time will \$9,700 gain \$780? interest at 2 per cent. a month?

5. How large a sum in the savings bank at 6 per cent. interest will give a yearly income of \$1,000?

Third Month.—Applications of Percentage, Ratio and Proportion.

Fourth Month.—To cube root. Make use of numbers for developing the formula for square root as shown in the previous month's assignment.

Make a constant use of blocks and formulas.

Fifth Month.—Mensuration continued. For original work, state, combine and recast problems as illustrated in last year's work.

Sixth Month.—Develop simple principles in Involution and evolution objectively. Carefully review the work of previous grades.

Seventh Month.—Involution and Evolution. In Proportion develop different methods of stating problems and finally solve by analysis. Keep up a general review by introducing principles heretofore taught, for daily work. Give practical examples introducing the application of the principles of G. C. D., L. C. M., Proportion, etc.

Eighth Month.—Complete mensuration, metric system, and review to page 529. For original work continue to state, combine and recast the problems from the review.

HISTORY.

First Month.—Revolutionary War. Time, Cause. Review by outline, Discoveries and Intercolonial Wars. Use following plan for presenting Intercolonial Wars:

Name.	Date.	Between What Nations.	Cause.	Results.
King William's	1689-1697	England & France.	Commercial Rivalry.	Nothing to Colonies.
Queen Anne's..	1702-1713	England, France and Spain.	Spanish Succession.	Acadia to England.
King George's.	1744-1748	England & France.	Austrian Succession.	Louisburg to France.
French and Indian.	1754-1763	England & France.	Struggle for Supremacy.	French driven from Colonies.

Second Month.—From the Declaration of Independence to the Inauguration of Washington. The Revolution is best studied by campaigns and by movements rather than by years. The Declaration of Independence, the treaty with France, the treaty which closed the war, the Articles of Confederation, the events leading to the Constitutional Convention as well as the work of this convention are among the things of most importance. A map of the country at the close of the Revolution should be required.

Third Month.—The Revolutionary War with the first three administrations in outline:

Name.	Date of Inauguration.	Years served.	States Admitted.	Events.
George Washington.	1789	8	Kentucky, Vermont, Tennessee,	War with Algiers; government organized bank; finances; mint; whisky rebellion; Indian wars; trouble with France; Jay's treaty; Rhode Island and North Carolina ratified Constitution.
John Adams.	1797	4		Capitol removed to Washington; alien and sedition laws; preparation for war with France; death of Washington and Patrick Henry.
Thomas Jefferson.	1801	8	Ohio.	Louisiana purchase; war with Tripoli; death of Hamilton; two important bills passed by Congress; foreign slave trade; U. S. Coast Survey.

Fourth Month.—Continue the study of administrations as outlined in previous month's work, to Jackson Administration.

Fifth Month.—From the inauguration of Washington to the Mexican War. The organization of government, the rise of the parties, the commercial difficulties leading to the 1812 War, the Monroe Doctrine, the Missouri Compromise, the question of nullification and the progress of industrial development, need to be carefully considered. A map showing the Louisiana purchase and how it enlarged the territory of the United States, should be drawn; and one biographical study should be assigned.

Sixth Month.—Teach the administrations, including Buchanan's. Continue to make important events in history serve as a basis for composition work. In teaching history make a constant use of the map and carefully review important points in geography.

Seventh Month.—The War of the Rebellion, with review. In teaching history make a constant use of the map and carefully review important points in geography.

From the Mexican War to the election of Lincoln. Some of the important topics in this month's work are the causes and the results of the Mexican War, the Compromise of 1850, and the causes of the Civil War. The biography of some representative man should be required and also maps showing changes in territory brought about by the Mexican War and subsequent purchases.

Eighth Month.—Complete the administrations with general review. Constantly consult the map in the study of important events, and finally for review purposes a progressive map should be drawn showing in detail the principal points in the history of the continent.

From the election of Lincoln to the succession of Johnson to the Presidency. There is somewhat more textbook work in this division but it is not so important and need not be so carefully studied. The detail of battle and of siege contains but little that is of real use except as it gives an idea of the magnitude of the struggle. Note

the attitude of foreign nations, the financiering and the changes in the method of warfare.

A biographical study of Lincoln and a map showing the territory in rebellion will prove of use in remembering places and events. Great care should at all times be exercised by the teacher in presenting subjects where differences of opinion exist. Partisanship and sectarianism have no place in the school room. Teach the recent important events, as the annexation of Hawaii, the Spanish-American War and the Philippine War.

SPELLING.

Continue the exercises in word-analysis, in connection with the other work in spelling, as before outlined.

Finish Kennedy's "What Words Say."

WRITING.

No outline of writing is given in this course, as it has not been thought best. Writing, it is believed, is best taught by having the pupils write, just as spelling is best taught by having the pupils spell, regularly and constantly. Writing is required and used throughout all grades, and it should be taught in connection with other subjects. This does not mean that the copy book is to be dispensed with at all, but that this subject should be correlated with the various branches taught, and thus it becomes a subject for constant instruction.

Having the pupils write an indefinite number of times the copy prepared, and when they have no relish or interest in the work, is not a good way to teach writing. It is to be noticed that in such cases the last line written is often the poorest of the entire exercise. Unless there is thought and relish in the work, little will be accomplished, just as little will be accomplished in any study where these factors are wanting.

It is never the quantum of writing done that determines its value as an exercise, but the amount of genuine effort put forth. Writing is largely a matter of habit, and good habits of writing cannot be formed in a fifteen-minute daily recitation, especially when every principle of good penmanship is disregarded for the re-

mainder of the day. Eternal vigilance is the price of good penmanship, in most cases, as it is the price of good spelling.

What is here said is intended to stimulate thought on the part of the teacher concerning this subject, rather than to lay down any dogmatic instruction. Ability to write well and rapidly is the goal sought. If your method of teaching secures this without cramping or hindering mental activity, it is a good method; if it does not, it is bad, and a change is required.

Pupils should not be allowed to continue writing the copy as a task merely, or to fill up the time of the recitation.

After a pupil has learned to write a fair hand, either by the slant or vertical system, do not require him to change. As a rule, the system first taught the child should be followed. The writing of the pupil may be ruined by compelling him to change from one system to another.

In the written work, in all grades, insist upon the very best in penmanship. Never accept work carelessly or slovenly done, or anything but the pupil's best effort. This should be the rule in all the grades and as to all studies, and that, too, when the work is written on the blackboard or in the writing or composition book.

For the first year, at least, the language lessons, including culture and nature studies, will furnish sufficient material for the writing lessons.

Seat Work.—For beginners, the teacher should write the lesson to be copied by the children, as nearly perfect as possible, on the blackboard. Long pencils, well sharpened, are necessary.

Writing should be correlated with spelling, reading and language, as well as with nature and culture studies and the other subjects taught. Under no circumstances should it be entirely separated from these studies. The child can be learning to spell, to know the words of his reading and language lesson and be learning something of literature while he is learning to write, and thus he ac-

compleishes much instead of little in a given period of time.

The three chief ends at which to aim in teaching writing are: (1) legibility, (2) speed, (3) beauty. To secure the first, the pupil must be led to carefully observe the form of each letter. Common errors should be discussed and special pains should be taken to avoid them. This should be done by both class drill and individual work. The second and third ends may be attained by leading pupils to acquire "the forearm movement." Letting the muscle of the forearm rest upon the desk, various movement exercises should be practiced, moving the arm as rapidly as may be without losing perfect control of its direction.

Every writing exercise ought to begin with a few minutes' drill on movement. Even accomplished penmen find a little practice of this kind necessary in order to get complete control of their muscles, and to concentrate the mind upon the work. How much more necessary it is then with those who are learning the art. The most practical exercises for this purpose are the direct oval, reversed oval, circle, straight lines up and down, groups of l's, t's, u's, m's, n's, long s's, @'s, etc., etc.

This practice should not be in copy-books but on a good smooth practice paper. The pupil should write his name at the top of each sheet and at the close of the exercise all the written sheets should be handed to the teacher to be examined and returned or destroyed, as she deems best.

In movement drills some pupils incline to fall into slow tracing, while others spasmodically throw the hand around with such speed and force as not to be able to guide its movement. To overcome these faults count, "up-down, up-down, up-down, up," for l's, m's and n's; "up, down-up, down-up, down-up," for t's and u's; "up-down-up-down-up-down-up," for straight lines, long s's, etc.; and "one-one-one-one-one," for ovals. Watch the class and be sure that all keep time. Count slowly at first, and faster as pupils become able to guide a more

rapid motion. In all these exercises look carefully to **size**, height and uniformity of the characters used.

After a few minutes' drill in movement, discuss the copy to be written, noting what particular point it is intended to give practice upon. Where copy-books are used many good teachers of writing prefer to have the pupil practice the copy on practice paper several times before writing it in the book at all. The tendency of copy-books is to get the pupil into the habit of slowly tracing the letters instead of writing them with a swift easy movement. This is tiresome and slow, and never produces graceful writing.

CIVICS.

Our law provides, Section 1861 of the political code, that in all the common schools of the State, by which is meant all the schools except the high schools, that instruction must be given in Civics of the United States and of Montana. "That attention must be given during the entire school course to the cultivation of manners, to the laws of health, physical exercises, ventilation and temperature of the school room." This is a salutary provision of law and it is the duty of every teacher to observe it. But it has been generally ignored by the teachers of this state, especially those in the common schools. Two reasons may be given for this, first, ignorance of the subject on the teacher's part; second, a failure to appreciate its vast importance.

The time has come when competent instruction in the principles of good government and good citizenship must be given in all the schools, primary, intermediate and high. Allied with civics are the subjects of patriotism, morals and manners, which should be taught in connection with it.

The work here suggested is intended more especially for the grades and rural schools. In the high schools an authorized text-book, McCleary's, is used, and the work is there taken up in a more systematic and thorough manner. The work as here outlined is based, principally, upon Dole's American Citizen, published by D.

C. Heath & Company, and this book, in addition to McCleary's, should be in the hands of every teacher. The work is planned for the eighth year of the course, but it may be begun in the seventh year when it is thought advisable. It is not to be understood, however, that this subject, in any form, is not to be taught before the seventh grade. It should be correlated as much as possible with the other branches.

Morals and manners, patriotism and the principles of good government are to be constantly taught throughout the school life of the child.

The pupils will not be required to purchase any text-books on civics, but they should be fully informed from day to day concerning the subject matter of the lesson and such references should be given them, by the teacher, as will enable them to fully prepare the same. Under no circumstances whatever should the teacher take sides in the discussion of any political or disputed question. The first thing for the teacher to do is to fully equip herself to teach the subject by making a thorough study of Dole's American Citizen or some other equally good text. Until the teacher has mastered the subject it is idle for her to attempt to teach it to others. Until she is impressed with its importance and becomes interested in it she cannot hope to interest others.

The following brief outline will readily suggest what is expected of the pupils in civics.

First Month.—Necessity of a government of some kind, and its chief duties, can be made plain by illustrations drawn from the home and school room. Begin with the school room. Duties and Powers of the Teacher, Duties and Rights of Pupils, Necessity of Government in School. Compare Power of Teacher in School to the Power of Governments in City and County. Punishments in School. Punishments by the Government. Object of Punishment in both Cases. Compare Rules of School with Laws of Society. Politeness and Morals.

Second Month.—The family and its government. Fol-

low outline of the first month, substituting parent for teacher, child for pupils and home for school. Personal habits. Regard for others' feelings and others' rights. Politeness.

Third Month.—United States Government. After having developed the purpose of Government as indicated in the first two months' work, take up the Constitution of the United States. Correlate the work as far as practicable with history. Circumstances under which the Constitution was adopted. Advantages of the Federal Constitution. A brief historical sketch of the separation from England and our subsequent development as a great nation. Departments of the Federal Government, as, Executive, Legislative, Judicial, who compose each department? Principal officers of Federal Government. Names, terms of office, duties, salaries, vacancies how filled? Election of President and Vice-President, Electoral College, Cabinet officers, how many, names, salaries, duties. Embassadors and Ministers.

Fourth Month.—Different kinds of government. Example of each. Which is the best? Why? Review previous work and continue the instruction in good morals and gentle manners.

Fifth Month.—Civil Government of Montana. Territorial Government, State Government. Adoption of the State Constitution. Admission of the State to the Union. Departments of State Government, as, Executive, Legislative and Judicial. Follow the outline for the third month. Name all elective State Officers, terms of office, duties, salaries, vacancies.

Sixth Month.—Division of State for governmental purposes. Example: Judicial District, county, city, township, school district, ward.

County Government: Officers, names, duties, salaries, vacancies. Take up city government and school district government in the same way.

Seventh Month.—State Institutions: Penitentiary, Reform School, University, School of Mines, Agricultural College, Deaf and Dumb Asylum, Orphans' Home.

Location. How supported? Object. Officers. Review work of previous month.

Eighth Month.—Elections, national and state. Time, manner; officers, how elected. Terms. Courts, Federal and State. Describe the United States Courts, as, Supreme, Circuit Court of Appeals, District and Circuit Courts. State Courts. Supreme, District, Justice of the Peace, Police.

Law Making.—Legislature. House and Senate. Members. Election. Terms of Office. Salaries.

Teach fully how a bill may be introduced in the Legislature and become a law. Review all the previous work.

Some of the subjects in the foregoing outline may be made the basis of the work in composition.

After the class has completed this work it should be reviewed orally and in writing.

Drawing.

FIRST YEAR.

Manual: "The Prang Primary Course in Art Education."—Part I.

Materials: Charcoal or soft pencil, water colors, colored paper, practice paper.

First half of year, study sphere, cube, cylinder. Second half, study hemisphere, square prism and triangular prism.

1. Model in clay.
2. Study and draw common objects resembling models.

3. Draw pictures, views and patterns of models.

Nature.—With colors, pencil or charcoal, draw fruits, leaves, vegetables, etc., in season.

Illustration of simple stories and poems.

Decoration.—Paint or cut from colored paper, borders and rosettes of squares, circles, triangles and semi-circles.

Figure Pose.—Have pupils take the attitude of play or

work. Study the proportions and make sketches in charcoal or silhouettes with brush. Work from life, also from imagination.

SECOND YEAR.

Manual: "The Prang Primary Course in Art Education."—Part II.

Material: Practice paper, soft pencil, water colors, colored paper.

Review models studied in first year. During the first half of year, study ellipsoid, ovoid, equilateral triangular prism. During the second half of year, study cone, square pyramid and vase forms.

Continue the nature work, figure pose, drawing of animals, illustration, etc., as begun in first year.

Decoration.—Begin historic ornament. Cut quatrefoil, Latin cross, Greek cross, Maltese cross, St. Andrew's cross, trefoil. Borders—Greek, Egyptian wave scroll and zigzag. Make original borders composed of straight lines. (Indian blankets, baskets and pottery usually show good examples of design from straight lines.)

Use colors for this decorative work. Draw or paint simple designs for plaids and stripes for ribbons. Paint trees from nature. Work in mass, with no attempt at detail.

THIRD YEAR.

Materials: Book I, the Prang Course in Drawing for Graded Schools. Practice paper, soft pencil, water colors, colored paper.

Follow directions given in manual for the drawing book. Complete ten pages during the first half year; complete book during second half year.

The pages of decoration should be done in colors, if possible, using colored paper or water colors.

On practice paper draw or paint groups of objects, models, fruits and vegetables.

Compose simple landscapes from memory, from imagination and from nature.

Make original borders, rosettes, plaids, etc., both in black and white and in colors.

Continue the various lines of representation, construction and decoration, as outlined for first year.

The quatrefoil and trefoil may form the unit of designs for church windows, back of pulpit chair, or any church furniture. Work out windows in colors.

FOURTH YEAR.

Materials: Book II, the Prang Course in Drawing for Graded Schools.

Practice paper, soft pencil, water colors, colored paper.

During first half of year, complete first ten pages in book. During last half of year, complete book. Follow directions in manual.

Do pages 7, 9, 15, 19, 20 with water colors or colored paper. If water colors are used, see page 19 of manual. The design may be outlined with black if desired.

On practice paper, continue work in all lines, as outlined for third year.

Apply the decorations studied and make original lines for book covers, menu cards, programs, etc. The lids of boxes made in this year may be decorated in colors, using a geometric design.

For space decoration, take squares, oblongs of various proportions, circles, semi-circles, etc., and fill the space well. Vines, branches of leaves, buds and flowers may be used as a motive.

FIFTH YEAR.

Materials: Book III, the Prang Course in Drawing for Graded Schools.

Practice paper, soft pencil, water colors, colored paper.

During the first half of year, complete the first ten pages in book. During the second half of year, complete book, following directions in manual.

Page 20, design for plate. Use some flowers as motive, conventionalize and paint in blue. Some may work the back-ground of border in blue, leaving the design and marginal lines white; others make design and lines blue against white background.

The Moorish design, page 10, is a good unit for borders or surface covering. The Florentine fleur-de-lis is

one of the best units. Work these both in colors. Draw the natural fleur-de-lis before making the conventional design.

Many poems may be read that will add interest to the nature work.

Continue the work in figure posing, illustration, nature work, construction and designing, as begun in fourth year.

SIXTH YEAR.

Materials: Book IV, the Prang Course in Drawing for Graded Schools.

Practice paper, soft pencil, water colors, colored paper.

During the first half of year, complete the first ten pages of book; during the last half of year, complete book. Follow directions given in manual.

Before attempting to draw Historic Ornament, study the manual, pages 120 to 124, also any interesting books on Egypt.

Then write and illustrate papers on the "Country of the Nile," "Egyptian Architecture," "Egyptian Decoration," "Egyptian Picture Writing," etc. If possible, do some of the designs in color. After this place pages in book.

On practice paper, make simple landscapes in two tones, the ink one tone, the paper the other tone. Later, use a similar landscape and work out in three tones: (1) Paper—white. (2) Ink—black. (3) Water colored with ink for a medium tone or gray.

Work out the figure pose lesson, beginning with a silhouette to get the form. Then use the two tones, working in the mass; after this outline with pencil. Continue all the various lines of representation, construction and decoration, as outlined for lower grades.

With color work out the Egyptian Decorations, also original designs. Make studies of cloud and sunset effects, simple landscapes, with few details, flowers, fruits and vegetables.

SEVENTH YEAR.

Materials: Book V, The Prang Course in Drawing for

Graded Schools.

Practice paper, soft pencil, water colors, colored paper.

During the first half of year, complete the first ten pages in book; complete the book during the last half of year.

Follow directions in the manual.

Before attempting to draw pages 7, 8, 9 and 10, study the manual, pages 153 to 159. Have the pupils read any of the books referred to on page 156, manual. Essays on "Greek Art," "Greek Sculpture," "Greek Architecture," etc., may then be written, having illustrations in pen and ink, water colors or pencil. After this work, draw pages on Greek ornament in book.

Continue nature work, figure posing, illustration, etc.

If an object is to be taken a second or third time, use a different medium and treatment. Let the drawings represent the work covered by other studies. Have illustrations for special days, seasons, etc.

Make initial letters in two tones; use ink. Many of the best magazines and books will furnish suggestions. Study the work of the best illustrators as it appears in magazines. Collect and mount these illustrations. Note the different mediums and methods of expression.

Illustrate short poems and stories. Study space relations, placing of printing and pictures.

EIGHTH YEAR.

Materials: Book VI, the Prang Course in Drawing for Graded Schools.

Practice paper, soft pencil, water colors, colored paper.

During the first half of year, complete the first ten pages in book; during latter half of year, complete the book.

1. Build towers with models placed above the level of the eye.

2. Drawing imaginary towers and spires.

3. Draw towers and spires from the school windows or at home, and place on page 18.

Continue work in all lines, as planned for seventh year.

Make a collection of good designs for surface covering, such as wall paper, woven fabrics, etc. Follow directions given in manual and the principles of composition. Then make several original designs, using brush and ink, or water colors in two tones, or colored paper. Page 20 may then be placed in book, using colors. From the pattern given make hexagonal prism; draw in different positions, noticing the number of vanishing points. Draw the toy house from the model, then add imaginary surroundings. The Oriental rug suggests excellent designs. Study pictures of rugs, then design one with a border and center, using straight lines; work out with brush and ink in two tones.

Nature Study.

FIRST YEAR.

Parts of the head. Animals; one mammal and one bird. Plants: (a) Plant seeds and require pupils to watch their growth. (b) Draw and describe the parts of a plant. (c) Call attention to the use of food to plant and animal life. Do not permit the oral lesson to degenerate into an "empirical grind" of committing to memory facts concerning plant and animal life. Unless the outlines are used for the purpose of training pupils to observe, compare and express, the object of the lesson is defeated. •

Teach children to measure and judge distances.

Parts of the body; head, neck, trunk, arms, hands, legs and feet. The head consists of the crown, face, forehead, cheeks, chin, mouth, lips, teeth, tongue, nose, nostrils, eyes and ears. Animals: compare the rabbit and squirrel. Birds: compare the hawk and owl. Flowers: the golden-rod and the aster. Trees: the fir tree and the cottonwood tree.

Parts of the arm and hand; as shoulder, elbow, wrist, palm, thumb, fingers. Parts of the leg and foot; as knee, ankle, heel, instep, ball, toes, etc. Animals, reptiles and

insects, one or two of each. "The lessons on animals should teach the concepts; bark, mew, purr, neigh, low, bleat, squeal, chirp, etc.," Plants: Draw and name—(1) parts of stem of plant. (2) Parts of leaf.

Make a collection of leaves and bark of native trees. Compare leaves of peach and apple; oak and maple, cottonwood and elm.

Color Lessons.—For color lessons, use transparent cards, crayons, colored slate pencils, etc.

Parts of the body; joints, shoulder, elbow, wrist, fingers, knee, toes, skin, hair and nails. Animals—Classify birds as to feet; perches and web-footed. Plants—(1) Stem: Erect, creeping, twining, climbing and clinging. (2) Roots: Tap and fibrous. Color: Primary and secondary.

SECOND YEAR.

Plant lima beans, sweet peas and corn. Require pupils to observe the growth of each, and finally draw and name the parts of each plant. Make a study, as far as practicable, of the Autumn fruits. Where are animals getting food now? Study the teeth of squirrels, rabbits, cats, dogs and cows. All work of this kind should be begun as a basis for the composition exercises. Compare the rabbit and the cat.

Make the following comparisons: Earth and rock; the wolf and the dog; the rose and the geranium. In the comparative lesson on the rose and the geranium, make a systematic study of the effect of frost upon leaves, and preparation necessary to be made for winter.

Animals, birds, fish and insects. Plants; surface of leaves; smooth, rough, hairy, etc. Compare the pigeon and the owl.

(1) Color: (a) Rainbow. (b) Common animals. (2) Form: Solids, including sphere, cylinder, cone and cube. (3) Plants: (a) stems, bark, wood, threads, fiber, pith. (4) Animals: (a) Baetrachian. (b) Crustacean. (c) Mollusk.

Wind, clouds, rain. Plants: parts of stem, bark, wood, pith, threads, fibers. Leaves: the following forms,

taken from Klemm's European Schools, page 50, may be placed upon the board by the teacher, to serve as a guide to the pupil in directing his attention to the different forms of leaves to be selected and studied; that is, pupils may bring at least one leaf to the class resembling each form placed upon the board.

THIRD YEAR.

The Pine; white, yellow; compare with fruit trees. The sun-flower; life, history, its kindred. The Potato and tomato compared. As far as practicable, a collection of the plant life which is to be made the subject for study should be made.

Animals; classify carnivorous animals as to feet; The cat, tiger, lion, bear, dog and fox. Birds: Climbers, Insects: By the use of a glass, make a drawing of the parts; head, thorax, abdomen.

Plants: (a) Compound leaves. (b) Arrangement of leaves; alternate, opposite and whorled. Make a collection of these.

Animals: Mammals; (a) Herbivorous. (b) Ruminating.

Birds: (a) Waders. (b) Birds of prey.

Draw and index at least two insects. The observation work in the main should be descriptive. All technical work, together with the elementary work in classifying plants, animals, etc., should be the outgrowth of the individual observation of the child. The use of the terms will be gained by the incidental use in oral and written reviews.

Draw, index and classify: (a) A plant. (b) A bird. (c) A reptile. (d) A fish. Make each drawing the subject for a composition.

FOURTH YEAR.

Plants: Study roots and root-hairs, with uses. Examine the stems of plants. Learn how they grow. Animals: Study from objects and books. Motion; covering; skeleton; cud-chewing; feet; breathing and eating.

Animals: classify four mammals. Birds: classify one

bird of prey, one wader, one web-footed bird, one climber and one percher.

Plants: Classify four flowering plants.

Plants: (1) Underground stems. (2) Roots. (3) Inflorescence: (a) Solitary. (b) Clustering.

Animals: Draw, index and classify at least four animals during the month. Make each drawing the subject for composition.

FIFTH YEAR.

Fire; carbonic acid gas and water; when a candle burns nothing is lost. Carbonic acid gas and water produced by burning candle; heat felt when chemical union goes on. For reference, use Science Primers (Roscoe's Chemistry.)

Air; what air contains; what goes on when air is heated; the action of animals and plants upon the air. Water; how oxygen and hydrogen can be collected from water; experiments in burning oxygen and hydrogen; water formed when hydrogen burns.

Fire; when a candle burns, nothing is lost. Heat felt when chemical union goes on. Metal becomes heavier by oxidation. The difference between sea and fresh water; solution and crystallization.

Manufacture of coal gas. Explosions in coal pits. How avoided. Collect gas from a burning candle. Water; soft, hard, sea-water. Water seeks its level.

SIXTH YEAR.

Motion; chief forces of nature; chemical attraction; how gravity acts; three states of matter; properties of solids; properties of liquids. For reference use Science Primer,—Prof. Stewart's Physics.

Properties of gases; the barometer; water pump; syphon; moving bodies; vibrating bodies; heated bodies.

Latent heat of water and steam; the boiling point; freezing mixture; distribution of heat; velocity of light.

Refraction of light; lenses; magnifying glasses; different kinds of light; electrified bodies, with simple experiments; electrical machines; properties of the currents; the electric telegraph and telephone.

Literature.

First Grade.

- The Lion and the MouseAesop.
The Little Match GirlAndersen.
The Four MusiciansGrimm.
The Old Woman and Her Pig—Classic
 Stories for Little OnesMcMurry.
How the Leaves Came DownMcMurry.
Golden Rod and the Aster. (From Nature
 Myths and Stories)Cook.
The Fir TreeAndersen.
The Bird With No NameGrimm.
The Pea BlossomAndersen.
The Fox Who Had Lost His TailPlato.
The Boy and the WolfHeart of Oak, Vol. I.
Mother HubbardHeart of Oak, Vol. I.
The Wolf in Sheep's SkinAesop.
The Peach Tree. (Plant Life, page 33)Bass.
The Cocoon. (Animal Life.)Bass.
Sun Fairies and Rain FairiesChildren's First Reader, p 59.
North Wind and the Snow PrincessApple Blossoms, page 48.
The North Wind. (Hiawatha)Longfellow.

Second Grade.

- The Crow and the PitcherAesop.
The Crow and the SheepAesop.
The Crow's ChildrenAlice Cary.
The Pigeon and the OwlEmilie Poulsson.
The OwlNature Studies, No. II.
A Tale With Two HeroesPlato.
Robinson Crusoe at Home
Grandma Kaoline. (Kindergarten Stories
 and Morning Talks)Wiltse, page 62.
A Story of the Pudding Stone. (Nature
 Myths and Stories, page 31.)
The Chirstmas Rose. (Little Flower
 Folks, Vol. II, page 49.)
A Cloud and a FountainStories from Plato.
An Old Story from Tadpole LandStories from Plato.
Robinson Crusoe: The Voyage.
Christmas in the Barn.....Emilie Poulsson.
The Sun and the North WindHeart of Oak, Vol. I.
The Pocket of Good and Bad DeedsStories from Plato.
The Island and Robinson's Home.
The Cat, the Ape and the NutHeart of Oak, Vol. I.
Friends in Feathers and FurJohonnot.
Book of Cats and DogsJohonnot.
Stories from BirdlandChase.
First Science ReaderNelson.

Nature Stories for Youngest ReadersDavis.
 All the Year Round—AutumnStrong.
 Seaside and Wayside—No. 1.....Wright.
 Animal LifeBass.
 Stories of Great Americans for Little
 AmericansEggleston.
 Stories of the United States for Youngest
 Readers.Davis.

Stories and Fairy Tales.

Adventures of a BrownieMulock.
 Little Lame PrinceMulock.
 Stories of the Red ChildrenBrooks.
 Aesop's Fables, Vol. I.....Pratt (editor.)
 Tales Told in the TwilightMolesworth and others.
 The Counterpane FairyPyle.
 Book of Fairy TalesHumphrey.
 Oldtime Stories Retold by ChildrenSmythe.
 In MythlandBeckwith.
 Fairy Stories and FablesBaldwin.
 Classic Stories for the Little OnesMcMurry.
 The Pied PiperBanta.
 Nature Myths and StoriesCooke.
 Hiawatha PrimerHolbrook.
 Buz-BuzPratt.
 Nursery Stories and RhymesPoulsson.
 The True Mother GooseMcManus.
 Treasures from Storyland .
 Little GrownupsTucker.
 Doctor Quack and Comical Cures.
 Peeps into Petland.
 Marjorie and Her PapaFletcher .
 Pleasant Trips by Trains and Ships.
 Through the Farmyard GatePoulsson.
 Kitty and Her KitsCrompton and others.
 Stories for Home and SchoolDewey.
 Robinson Crusoe (one syllable).

Third Grade.

The Miraculous Pitcher .
 Hawthorne's Wonder Book.
 Story of Montezuma
 Aesop's Fables.
 Four Feet, Two Feet and No FeetRichards.
 Stories from Animal LandChase.
 Buz....Noel.
 Victor in Buz-landBell.
 Queer Little PeopleStowe.
 Talks by Queer FolksBamford.
 Second Science ReaderNelson.

Third Natural History ReaderWood.
 World by FiresideKirby.
 Great Round World Natural History
 Stories, 2 v..... Bishop.
 Plant Baby and Its FriendsBrown.
 Stories of Colonial ChildrenPratt.
 Stories of Great InventorsMacomber.
 Stories of American Pioneers
 Fifty Famous Stories RetoldBaldwin.

Stories and Fairy Tales.

Alice in WonderlandCarroll.
 Fairy Tales (edited by Stickney, first
 series) Andersen.
 Greek Hero StoriesNiebuhr.
 The Joyous Story of TotoRichards.
 Toto's Merry WinterRichards.
 Sleeping Beauty in the WoodLang (editor.)
 Stories from PlatoBurt.
 Book of Folk StoriesScudder
 Dream Children Scudder.
 Stories of Norse Gods and HeroesKlingensmith.
 Wonder BookHawthorne.
 Letters from a CatJackson.
 Bessie and BeeBrine.
 Polly CologneDiaz.
 Bimbi Ouida.
 Stepping Stones to Literature, No. 3.....Arnold and Gilbert.
 Picture Book, 2 vols.....Caldecott.
 Tiddledewinks Poetry BookBangs.
 Pussy Purr and Fun and Fur.
 Happy Tots.
 Charles and His LambSaunders.
 When Molly Was SixWhite.
 Robinson Crusoe, edited for Children by
 McMurryDe Foe.
 Child's Christ TalesProudfoot.

Fourth Grade.

Stories Mother Nature Told Her Children.Andrews.
 Neighbors with Wings and FinsJohonnot.
 Aunt Martha's Corner CupboardKirby.
 Seed BabiesMorley.
 Tommy-Anne and the Three HeartsWright.
 Along the Florida ReefHolder.
 OverheadNichols.
 UnderfootNichols.
 Earliest Days in AmericaHazard and Dutton.
 Revolutionary Pioneers for Young People.
 First Book in American HistoryEggleston.

Bright BoysReddall.
 American History Stories, 4 vols.....Pratt.
 How New England Was MadeHumphrey.
 The True Story of George Washington...Brooks.
 The True Story of Benjamin FranklinBrooks.
 Stories of American HistoryDodge.
 Old Stories of the EastBaldwin.
 Short Stories from English HistoryBlaisdell.
 Child Stories from the MastersMenefee.

Stories and Fairy Tales.

Brownie BooksCox.
 Water BabiesKingsley.
 Tommy ToddlesLee.
 Wonder ClockPyle.
 Children's BookScudder.
 Seven Little SistersAndrews.
 Each and AllAndrews.
 Ten BoysAndrews.
 Editha's BurglarBurnett.
 Little Saint ElizabethBurnett.
 Bodley's on WheelsScudder.
 Sparrow, the TrampWesselhoeft.
 Signal Boys of '75Otis.
 Boys of Fort SchuylerOtis.
 Eight CousinsAlcott.
 Black BeautySewell.
 Bedtime StoriesMoulton.
 Lost JewelsSpofford.
 Little JarvisSeawell.
 Lady JaneJamison.
 Three Little Daughters of the Revolution.Perry.
 His Little Royal HighnessOgden.
 When Life is YoungDodge.

Fifth Grade.

Curious Homes and Their TenantsBeard.
 Short Stories of Shy NeighborsKelly.
 Four-Handed FolkMiller.
 A World of Little PeopleAlden.
 Flowers and Their FriendsMorley.
 Funny FriendsMiller.
 Father AldurGiberne.
 Leaves from Nature's Story Book, vol. 2-3Kelly.
 Great American Industries, 2 v.....Rocheleau.
 Zigzag Journeys in the White CityButterworth.
 Stories of AustralasiaPratt.
 Klockabout Club AlongshoreStephens.
 Children of All Nations
 Sailor Life on a Man-of-WarNordhoff.

Land of Pluck	Dodge.
Miss Gray's Girls	Grant.
Our Country. East	
Historic Girls	Brooks.
Historic Boys	Brooks.
Century Book of Famous Americans	Brooks.
Century Book for Young Americans	Brooks.
Heroic Happenings	Brooks.
Hero Tales from American History	Lodge and Roosevelt.
Pilgrims and Puritans	Moore-Tiffany.
From Colony to Commonwealth	Moore-Tiffany.
Paul Jones	Seawell.
Children's Stories of American History..	Wright.
Children's Stories of American Progress..	Wright.
Montezuma	Eggleston.
Stories of Old Rome	Pratt.
Stories of England	Pratt.
Story of the Chosen People	Guerber.
Boys of the Bible	Handford.

Stories and Fairy Tales.

Heroes	Kingsley.
Fanciful Tales.	Stockton.
Imaginations	Jenks.
The Court of King Arthur	Frost.
Horse Fair	Baldwin.
Bits of Talk	Jackson.
The Story of the Iliad	Church.
Being a Boy	Warner.
Sea Yarns for Boys	Henderson.
Jack and Jill	Alcott.
Under the Lilacs	Alcott.
Cruise of the Canoe Club	Alden.
Kent Hampden	Davis.
The Modern Vikings	Boyesen.
Little Lord Fauntleroy	Burnett.
Howling Wolf and His Trick Pony.....	Champney.
Half a Dozen Boys	Ray.
Half a Dozen Girls	Ray.
Talking Leaves	Stoddard.
Beautiful Joe	Saunders.
Two Little Confederates	Page.
Summer in a Canyon	Wiggin.

Sixth Grade.

Neighbors with Claws and Hoofs	Johonnot.
The Population of an Old Pear Tree	Van Bruyssel.
Friends Worth Knowing	Ingersoll.
Chapters on Plant Life	Herrick.
Familiar Animals and the Wild Kindred.	Monteith.

Young Folks' Ways and WhereforesUncle Lawrence.
 Young Folks' IdeasUncle Lawrence.
 Young Folks' QueriesUncle Lawrence.
 What Mr. Darwin Saw in His Voyage

 Rcund the World on the Ship Beagle....Darwin.
 Stories of InventionHale.
 Our Country: West
 Family Flight Around HomeHale.
 Northern EuropePratt.
 Child Life in JapanAyrton.
 How Dick and Molly Saw EnglandLegh.
 Around the World StoriesSeward.
 Zigzag Journeys in AustraliaButterworth.
 Drifting Around the WorldHail.
 Great Men's SonsBrooks.
 The True Story of Abraham Lincoln.....Brooks.
 Christopher CarsonAbbott.
 Longfellow Remembrance Book
 De Soto, Marquette and La SallePratt.
 About Old Story TellersMitchell.
 Stories of the SaintsChenoweth.
 Chivalric DaysBrooks.
 Little Arthur's History of EnglandCalcott.
 Boston Tea PartyWatson.
 Stories of ColumbiaGlasscock.
 Stories of the Civil War.....Blaisdell.
 The Young AmericanJudson.
 Story of the American IndianBrooks.

Stories, Fairy Tales and Literature.

Seven American ClassicsSwinton and Cathcart.
 Stories from Old English PoetryRichardson.
 Selections from Child Life in Poetry and
 ProseWhittier.
 Tales Out of SchoolStockton
 Story of SiegfriedBaldwin.
 Snow Bird and the Water TigerCompton.
 Man Who Married the MoonLummis.
 Old Greek StoriesHanson.
 Little WomenAlcott.
 Little Men....Alcott.
 Jo's Boys.Alcott.
 No HeroesHoward.
 Fur Seal's ToothMunroe.
 Hans BrinkerDodge.
 Afloat with the FlagHenderson.
 Fairport Nine or Boys of FairportBrooks.
 Story of a Bad Boy.....Aldrich.
 King of the ParkSaunders.
 In Blue Creek CanyonRay.

Orcutt Girls	Vaile.
Young Supercargo	Drysdale.
Marjorie's Quest	Gould.
Mālvērn	Deland.
Riverpark Rebellion	Greene.
Little Ladies	Milman.

Seventh Grade

A Song of Life	Morley.
The Sea and Its Wonders	Kirby.
Petland Revisited	Wood.
Little People	Hook.
Seaside and Wayside, No. 4.....	Wright.
Half-hours with Early Explorers	Frost.
Dragons and Cherry Blossoms	Morris.
Our Western Archipelago	Field.
The Knockabout Club in the Everglades..	Ober.
Zigzag Journeys in Northern Lands	Butterworth.
We Two Alone in Europe	Ninde.
In Savage Africa	Glave.
Little People of Asia	Miller.
Heroes and Martyrs of Invention	Towle.
The Friend of Washington	Watson.
Raleigh, His Exploits and Voyages....	Towle.
Historical Reader, a Story of the Indians of New England.....	Burton.
Stories of New York	Lovering.
Stories of Massachusetts	Pratt and Lovering.
Stories from English History for Young Americans	
Magna Charta Stories	Gilman.
Story of the Greeks.	Guerber.
Story of the Romans	Guerber.
Short History of Spain	Parmelee.
Great Thoughts for Little Thinkers	Ames.

Stories, Fairy Tales and Literature.

Essays from the Sketch Book (Riverside lit, ser.)	Irving.
Tales from Shakespeare	Lamb.
Lyra Heroica, a book of verse for boys..	Henley.
We All	Thanet.
Uncle Tom's Cabin	Stowe.
My Kalulu..	Stanley.
Into Unknown Seas	Ker.
A Girl of '76.....	Blanchard.
Derick	Yechton.
Wampum Belt	Butterwrth.
Peasant and Prince	Martineau.
Search for Andrew Field	Tomlinson.

Quinnebasset Girls	May.
Tom Brown at Rugby	Hughes.
Wanneta the Sioux	Moorehead.
Pilots of Pomona	Leighton.
Arthur Bonnicastle	Holland.
Thy Friend Dorothy	Blanchard.
Burnham Breaker	Greene.
Pocket Rifle	Trowbridge.
Among the Lakes	Stoddard.
Midshipman Farragut	Barnes.
King of the Broncos	Lummis.

Eighth Grade.

Stories of the Trees	Dyson.
Tenants of an Old Farm	McCook.
The Plant World	Vincent.
On the Hills	Starr.
Hall of Shells	Hardy.
Childhood of the World	Clodd.
The Ivory King	Holder.
Nooks and Corners of the New England Coast	Drake.
My Arctic Journal	Peary.
Tent Life in Siberia	Kennan.
Through Russia on a Mustang	Stevens.
Through David's Realm	Tompkins.
Our Great West	Ralph.
Dixie	Ralph.
Children's Stories of the Great Scientists.	Wright.
True Story Book	Lang.
Men Who Win	Thayer.
Women Who Win	Thayer.
A New England Boyhood	Hale.
Boots and Saddles	Custer.
Cadet Life at West Point	Reed.
Children's Life of Lincoln	Putnam.
Life of George Washington	Hale.
Historical Tales —	
Greek	Morris.
Russian	Morris.
French ..	Morris.
English	Morris.
German	Morris.
Making of New England	Drake.
Making of the Ohio Valley States	Drake.
The Romance of American Colonization.	Griffis.
The Romance of American Discovery ...	Griffis.
The Pilgrims in their Three Homes	Griffis.
Inside the White House in War Time ...	Stoddard.
Recollections of a Drummer Boy	Kieffer.

Recollections of a PrivateGosse.
 Stories of Missouri.....Musick .
 Stories of New JerseyStockton.
 Stories of GeorgiaHarris.
 Stories of IndiaThompson.
 Stories of OhioHowells.
 Stories of PennsylvaniaWalton and Brumbaugh. .
 Uncle Sam's SecretsAustin.
 American War Ballads and LyricsEggleston (editor.)

Fiction.

White IslanderCatherwood.
 Romance of DollardCatherwood.
 Donald MarcyPhelps.
 Ward Hill, the SeniorTomlinson.
 Man Without a CountryHale.
 Thankful BlossomHarte.
 Standish of StandishAustin.
 For King or CountryBarnes.
 The Big BrotherEggleston.
 IvanhoeScott.
 Cadet DaysKing.
 Otto of the Silver HandPyle.
 Polly Oliver's ProblemWiggin.
 In the NavyGoss.
 Cudjo's CaveTrowbridge.
 Scottish ChiefsPorter.
 Christine's CareerKing.
 A Midnight WarningHouse.

BOOKS FOR TEACHERS.

GENERAL.

Burt, Mary E. Literary Landmarks; a guide to good reading for young people and teachers' assistant; with a carefully selected list of seven hundred books. 1892. Houghton. 75c.

HISTORY OF EDUCATION.

Compayre, Gabriel. History of Pedagogy: Translated with an introduction and notes, by W. H. Payne. 1886. D. C. Heath & Co. \$1.75.

Painter, F. V. N. History of Education. 1886. Appleton. \$1.50.

Herbart, Johann F. Science of Education. 1893. D. C. Heath & Co. \$1.00.

Pestalozzi, Johann Heinrich. Leonard and Gertrude. 1885. D. C. Heath & Co. Paper 25c, cloth 90c.

Froebel. Education Through Self-Activity, by H. Courthope Bowen. 1892. Scribner, \$1.25.

Herbart and Herbartians, by Charles DeGarmo. Scribner, \$1.00.

PEDAGOGY.

Wickersham, James P. Methods of Instruction. Lippincott, \$1.28.

Bain, Alexander. Education as a Science. 1878. Appleton, \$1.75.

Baldwin, Joseph. Art of School Management. 1880. Appleton, \$1.50.

White, Dr. E. E. School Management. A. B. Co., \$1.

McMurry, Charles A. Course of study for the eight grades of the common school including a hand book of practical suggestions for teachers. 1895. Public School Publishing Company, Bloomington, Ill. Flexible covers 40c, cloth 50c.

McMurry, Charles A. and McMurry, Frank. Method

of Recitation. 1897. Public School Publishing Company, Bloomington, Ill., \$1.

McMurry, Charles A. Special method in geography for third and fourth grades. 1895. Public School Publishing Company, Bloomington, Ill. Flexible covers 40c, cloth 50c.

Frye, Alex E. Child and Nature; or, Geography teaching with sand and modeling. 1888. Ginn & Co., 80c.

McMurry, Charles A. Special method in the reading of complete English classics in the grades of the common school. 1895. Public School Publishing Company, Bloomington, Ill. Flexible 30c, cloth 40c.

McMurry. Classic Stories for Little Folks. Public School Publishing Company, Bloomington, Ill.

McMurry. Special Method in Literature and History. Public School Publishing Company, Bloomington, Ill.

McMurry, Charles A. Special Method in the Natural Science for the first four grades of common school. 1896. Public School Publishing Company, Bloomington, Ill. 50c.

Jackman, Wilber S. Nature Study for Common Schools. 1891. Holt, \$1.20.

PSYCHOLOGY.

Psychology in the School Room. Longmans, Green & Co., New York.

Halleck, Reuben P. Education of the Central Nervous System. Macmillan, \$1.

Scripture, E. W. Thinking, Feeling, Doing. Flood & Vincent, \$1.

PATRIOTISM.

American Citizen, Dole. D. C. Heath & Co., \$1.

Patriotism for Young Americans, Nordhoff, American Book Co., 75c.

Patriotic Citizen. A. B. Co., \$1.

MORALS AND MANNERS.

Good Morals and Gentle Manners. A. B. Co., \$1.

GYMNASTICS AND CALISTHENICS.

Swedish System of Gymnastics. Ed. Pub. Co., 75c.

Hand Book of School Gymnastics. Posse. Lee & Shepard, Boston, 48c.

Physical Education. Morris. A. B. Co., \$1.

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SUGGESTIVE PROGRAM.

Closing Time.	Minutes.	Primary.	Intermediate.	Grammar.
9:10	10	OPENING EXERCISES.		
9:35	25	Seat work.	Arithmetic.	<i>Arithmetic.</i>
10:00	25	Number on slate or with objects.	<i>Arithmetic.</i>	Geography.
10:25	25	<i>Number.</i>	Geography.	Geography.
10:45	20	Busy work.	Geography.	<i>Geography.</i>
10:55	10	RECESS.		
11:15	20	Silent reading.	<i>Geography.</i>	Grammar.
11:35	20	<i>Reading and Spelling</i>	Form work, map Drawing, sand molding, etc.	Grammar.
12:00	25	Excused from School	Reading.	Grammar.

NOON INTERMISSION.

1:10	10	*	*	*
1:30	20	Busy work.	<i>Reading.</i>	Reading.
1:50	20	Silent reading.	Seat work.*	<i>Reading.</i>
2:10	20	<i>Reading and Spelling</i>	Animal or plant study	U. S. History or Physiology.
2:40	30	<i>Writing or Language</i>	<i>Writing or Language</i>	<i>Writing or Language</i>
2:50	10	RECESS.		
3:10	20	Number on Slate or with objects.	Spelling.	<i>U. S. History or Physiology.</i>
3:35	25	Drawing, singing or moral instruction.	Drawing, singing or moral instruction.	Drawing, singing or moral instruction.
3:50	15	Excused from school	<i>Spelling.</i>	Spelling.
4:00	10		Arithmetic.	<i>Spelling.</i>

*As may be provided for by the teacher.

United States History may be taught the first half of the session, and physiology the second half; or each branch may have two lessons a week.

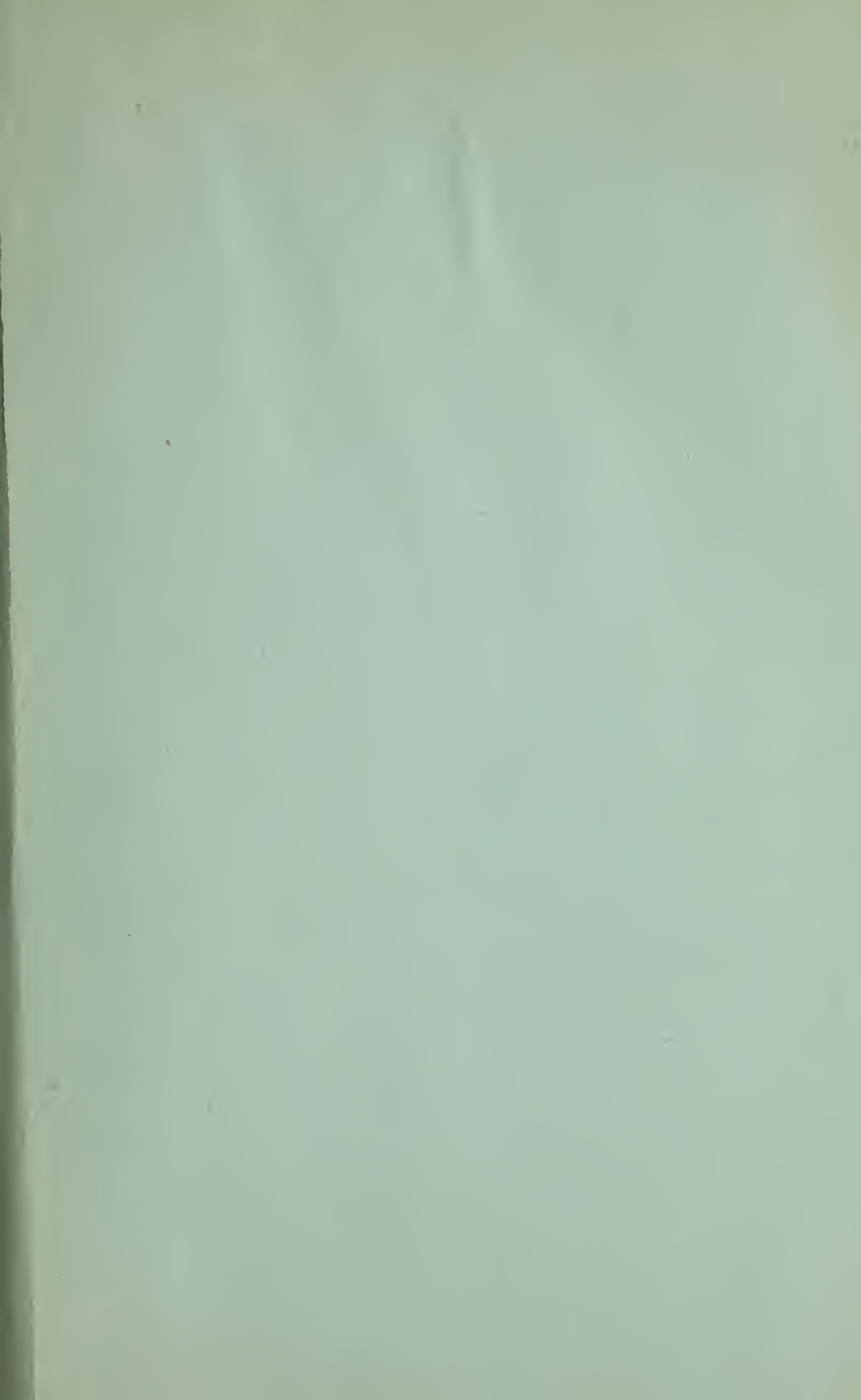
On Friday the last twenty-five minutes may be devoted to instruction in hygiene, temperance, natural history, etc.

The words in italics on the program indicate the time for recitation; ordinary type, study or seat work.

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